Forty-Fifth Annual Report

of the

State Board of Health

of South Carolina

For the Fiscal Year 1924 to the
Legislature of South Carolina

PRINTED UNDER THE DIRECTION OF THE
JOINT COMMITTEE ON PRINTING
GENERAL ASSEMBLY OF SOUTH CAROLINA

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LETTER OF TRANSMITTAL

Honorable Thos. G. McLeod, Governor of South Carolina, Columbia, S. C.

Sir: I have the honor to submit for your consideration the Annual Report of the Executive Committee of the State Board of Health for the year 1924 and request that you transmit it to the General Assembly. The reports of the several departments set forth in detail, the work accomplished by each and show the magnitude and extent of the correlated activities of the Board under the guidance of the Health Officer.

It will be noted that there has been a general increase in the number of deaths involving twenty-five of the thirty-eight diseases listed. The diseases furnishing the largest increase in mortality are pneumonia, diseases of the kidneys and diseases of the circulation. In the latter group three hundred and forty-seven more deaths are recorded from January 1st to October 31st than in the corresponding period of the previous year. These facts compel attention and call for an explanation. This is not the place to pursue such an enquiry, but it may be pointed out that one factor in producing fatal diseases of the heart and blood vessels is syphilis and this type of venereal disease should be attacked vigorously from the standpoint of public health. Unfortunately the campaign which the State Board of Health had inaugurated against the venereal diseases has been closed on account of lack of funds. It is a shortsighted policy to withhold an appropriation for the stamping out of a class of the infectious diseases which is so destructive of both physical and mental health and whose effects are so far reaching as to extend into the next generation not yet born upon whom the future depends. It is to be hoped that the General Assembly will correct the error and provide the State Board of Health with the necessary means to carry on a work of such vital importance.

The increase in the number of cases of rabies also is a matter of grave concern, and urgently calls for legislation to check the progress of the disease. Practically every county in the State is now infected.

The establishment of a Dental department is again requested. The importance of sound teeth as an essential factor in the preservation of health is no longer to be questioned and oral hygiene, therefore, assumes a prominent place in public health work. The amount of work accomplished by Dr. Early and the support which his efforts have received are sufficient evidence of its value to the public.

The work done by Dr. W. A. Boyd in restoring crippled children to health merits special attention. Dr. Boyd has given his services without remuneration and the results obtained have more than justified the expenditure made. It is to be hoped that this beneficent work can be continued without interruption.

The high standards set by all departments in previous years have been maintained and a careful perusal of each report will manifest the thoroughness and efficiency of the workers in the field of public health.

Respectfully,

ROBERT WILSON,
Chairman State Board of Health.

GENERAL REPORT

This is the forty-fifth annual report of the Executive Committee of the State Board of Health, and is for the year ending December 31, 1924.

This report is made in compliance with the Concurrent Resolution, which directs that every officer of the departments of the State Government required by law to make a report to the General Assembly shall contain only concise statements of recommendations and of the transactions of the officer of the department; and that no copy of any report or document, or law, or proposed measure shall be made and printed at the expense of the State except what shall be absolutely necessary for the information of the General Assembly.

EXECUTIVE COMMITTEE STATE BOARD OF HEALTH.

Robert Wilson, Jr., M. D., Chairman ..... Charleston
Robt. A. Marsh, M. D. (Deceased Oct. 19, 1924) .... Edgefield
C. C. Gambrell, M. D. ..... Abbeville
E. A. Hines, M. D. ..... Seneca
Wm. R. Wallace, M. D. ..... Chester
William Egleston, M. D. ..... Hartsville
W. M. Lester, M. D. ..... Columbia
S. C. Calder, Ph. G. ..... Greenville
Samuel M. Wolfe, Attorney General ..... Columbia
Walter E. Duncan, Comptroller General ..... Columbia
James A. Hayne, M. D. .....
Secretary and State Health Officer, Columbia.

STAFF OF SOUTH CAROLINA DEPARTMENT OF HEALTH.

James A. Hayne, M. D., Executive Officer of State Board of Health.

A. H. Hayden, M. D., Epidemiologist.
E. L. Filby, State Sanitary Engineer.
J. H. Woodward, Hotel Inspector.
Mrs. James R. Cain, Field Secretary, South Carolina Sanatorium.
E. W. Grieshaber, Bookkeeper.
W. M. Riser, Secretary to Dr. Hayne.
Porter.

LABORATORY DEPARTMENT.

H. M. Smith, M. D., in charge.
James R. Cain, Bacteriologist.
Eugenia McDonald, Technician.
M. C. Davis, Stenographer.
F. L. Parker, M. D., Chemist and Bacteriologist, Charleston.

BUREAU OF VITAL STATISTICS.

C. W. Miller, Asst. State Registrar.
Mary Boykin Heyward, File Clerk.
Mary Currell, Stenographer.
Lize Darby, Index Clerk.

MALARIA DEPARTMENT.

L. M. Fisher, Director.
R. G. Hamilton, M. D., Malaria Epidemiologist.
William Weston, Malaria Field Agent.
P. G. Hasell, Malaria Field Agent.
Mary Dorn, Stenographer.

Marion County.

Wallace L. Poole, M. D., County Health Officer.

Beaufort County.

T. R. Meyer, M. D., County Health Officer.

Georgetown County.

Chas. M. Moore, M. D., County Health Officer.
Miss Louvilla Honaker, R. N. County Nurse.

BUREAU OF CHILD HYGIENE.

Miss Ada Taylor Graham, Director.
Miss Fannie O. Winter, Secretary to Director.
Miss Mary McMillan, Secretary to Staff.
Mrs. F. Hill, Statistical Clerk.
Miss Jeanette Hays, District Supervisor.
Miss Nellie C. Cunningham, District Supervisor.
Miss Laura Blackburn, Midwife Supervisor and Field Nurse.
Miss Katherine Malone, Field Nurse. (On duty July 1).
Mrs. Henrietta Ablard, Field Nurse. (Resigned Nov. 1, 1924).
Nurse Ellen W. Carter, Colored Field Nurse.

DEPARTMENT COUNTY HEALTH WORK.

Dr. L. A. Riser, Director.
E. A. Early, D. D. S., Director of Dental Clinics.
Miss F. L. Gary, Secretary.
R. N. Covington, Moving Picture Operator.

Aiken County:
Dr. C. H. Farmer, Health Officer.
Miss Rose Herbert, Nurse.
H. R. Busch, Inspector.

Anderson County:
Dr. E. E. Epting, Health Officer.
Mrs. Lois Preach, Nurse.
Brooks Hubbard, Inspector.

Charleston County:
Dr. Leon Banov, Health Officer.
Mrs. Amelia Tanksley, Nurse.
S. S. Welch, Inspector.
Miss May Mood, Secretary.

Cherokee County:
Dr. W. H. Shealy, Health Officer.
Miss Conya Traynham, Nurse.

Colleton County:

Dr. L. W. Martin, Health Officer.
Miss Edna Anderson, Nurse.

Darlington County:

Dr. A. B. Hooton, Health Officer.
Miss Sadie Kendall, Nurse.

Dillon County:

Dr. R. G. Beachley, Health Officer.
Miss Martha Flynn, Nurse.
E. Z. James, Inspector.

Fairfield County:

Dr. Roderick MacDonald, Health Officer.
Miss Mildred Foreman, Nurse.

Greenville County:

Dr. Baylis Earle, Health Officer.
Miss R. B. Hellams, Nurse.
T. T. Fowler, Inspector.

Newberry County:

Dr. H. G. Callison, Health Officer.
Miss Theresa Lightsey, Nurse.
J. R. Wise, Inspector.

Orangeburg County:

Dr. C. C. Bolin, Health Officer.
Miss Bess Dalton, Nurse.

SOUTH CAROLINA SANITORIUM.

Ernest Cooper, M. D., Superintendent.
J. C. Bonner, M. D., Assistant Physician.

Mrs. Estelle Cooper, Matron.
Carrie Spivey, R. N.
Pearl Leitzey, R. N.
Pupil Nurses.
Servants.

PALMETTO SANITORIUM.

Horneithea Witherspoon, Housekeeper.
Rebecca Belton, Nurse.
Mary White, Nurse.
Servants.

THE BOARD'S QUARTERS.

The Executive Department of the State Board of Health, the Bureau of Child Hygiene, Malaria Control Department, and the Department of County Health Work occupy rooms on the second floor of the Palmetto Building.

The Labortary remains in well arranged rooms furnished by the University of South Carolina, in LeConte College.

The Bureau of Vital Statistics is at the University of South Carolina in LeConte College.

The South Carolina Sanitorium for the treatment of Tuberculosis at State Park, eight miles from Columbia.

E. R. Squibb & Sons of New York continue to furnish the State reliable diphtheria antitoxin and vaccine virus.

MISCELLANEOUS

The Executive Committee of the State Board of Health met at its four regular meetings and one call meeting during the year. It is with great sorrow that we have to report to the Legislature the death of two of its most active members, Dr. C. C. Gambrell of Abbeville, who has been with the Board, since 1908, and Dr. Robert A. Marsh, of Edgefield, elected to the Board in 1919. It will be indeed hard to fill their places for they were men who were always present at the meetings of the Board and were most active in endeavoring to promote public health in South Carolina.

The Legislature will find carefully compiled reports from each department engaged in the public health work of the State.

The showing made by them is remarkable. The work is systematized and there is no overlapping of agencies.

Under the head of Malaria Control of this State a new department was made this year of three counties, partly financed by the State, partly by the county and partly by the International Health Board. Whole time county health officers and whole time nurses were provided for these counties. Malaria control was stressed but other activities of public health were carried out in these counties. The report of Capt. L. M. Fisher, of the U. S. Public Health Service, in charge of this department, is appended. Capt. Fisher is loaned to us by the Federal Government, his salary and traveling expenses being entirely paid by Federal funds. His report shows the great amount of work done and that progress is being made in ridding the lower counties of the State of South Carolina of the stigma of malaria.

The vital statistics of this State for 1924 show that there were for the first ten months an increase of deaths and births reported in South Carolina. The death rate is 12.9 and the birth rate 25.8. Tuberculosis continues to show a lessening death rate in South Carolina, as does also diphtheria. Typhoid fever shows an increase this year, being 330 against 223 the year previous. We believe this to have been due to two causes, one the increase of the use of bathing pools throughout the State; second, to the heavy rains which washed into open wells and springs; thus contaminating them. The three main sources of increase in the death rate were, diseases of the circulation, diseases of the kidneys, and intestinal diseases. Automobile accidents, 20 in 1924, 82 in 1923. This is a deplorable increase. The death rate from automobile accidents in South Carolina is now higher than the death rate from diphtheria, measles, malaria, whooping cough, and several other communicable diseases. There were 183 homicides and 45 suicides in the State during the year, both these causes showing an increase. There was a decrease in legal executions.

The report of the department of Rural Sanitation shows there were eleven counties under this department with whole time county health officers. There were also three counties with whole time county health officers and county nurses doing malarial work, making 14 counties in all that had whole time health service. This covers over half the population of the State. A

complete report of the doings of this department is submitted by Dr. L. A. Riser, in Charge, and will be found elsewhere in this volume.

Dr. E. A. Early, in Charge of Dental Clinics, submits a most excellent report of his work. A bill was introduced in the last Legislature asking for the establishment of a dental department but was not favorably acted upon and will be re-introduced this year. We feel that this is a most necessary activity of the State Board of Health and Dr. Early's report, appended, will show how many have taken advantage of this work in South Carolina during the past year.

The distribution of typhoid bacterin reached the highest figures it has done since the health department has been making free distribution of the same. There were 184,413 ampules distributed in 1924 as against 98,963 in 1923, and approximately 61,471 people were immunized against this disease.

The report of the Hygienic Laboratory shows again much increase in work over the past year. Especially is this true of the rabies treatment. There has been a marked increase in rabies among animals in the State and 1,063 persons have been treated. This covers every county in the State, the largest number from Greenville, 126, Spartanburg next with 121; the smallest being in McCormick with 1. 961 people received complete treatments for this disease. It is hoped the Legislature will take some steps to prevent the rapid increase of this dread disease. There were in the State during the past year 3 deaths, 2 colored and 1 white. The two colored patients developed the disease before completion of the treatment, having been badly bitten about the face, which is almost always fatal in spite of the treatment. The white patient did not take the treatment.

No work has been done by the State this year in Venereal Disease control, no funds being available either from State or Federal Government. We consider this a great neglect on the part of the State as this is one of the most important of health measures. Greenville, Orangeburg and Spartanburg Counties maintained excellent clinics during the year and their work has been very successful. We again bring to the attention of the Legislature that we are not doing our duty in public health work unless we include the prevention of venereal disease in our activities.

A most excellent report is submitted by Miss Ada Taylor Graham on the work of the Bureau of Child Hygiene, Maternity and Infancy. The Child Health Truck, which was put on entirely at the expense of the Federal Government, has again done most excellent work throughout the State, as her report shows. Her report also shows that a great many visits were made throughout the State and that much has been done toward preventing maternity and infancy mortality. Of special interest is the report on a number of midwives given certificates. There were 2,426 midwives enrolled, and of this number certificates were given to 1,002. These midwives were given six weeks instruction in the elements of midwifery and are required to be registered with the registrars of vital statistics in the various townships of the State. Much has been done toward educating them and making them more useful to the communities in which they do their work.

We again call attention to the fact that a number of trustees of schools have refused or neglected to carry out the Act of the General Assembly requiring children to be vaccinated against smallpox before they can be admitted into the schools of the State. We hope that something will be done at this session toward a better understanding on their part of their duties in this respect.

One excellent piece of work done under the auspices of the State Board of Health this year was by Dr. W. A. Boyd, who gave gladly his time, free of charge, to the State in the relieving of the crippled children of South Carolina. He promised that he would, if the Legislature would appropriate $5,000, restore 100 crippled children to a normal condition. He has kept his promise and now can show these little children restored so that they can enjoy the delights of childhood and no longer be set apart from their playmates on account of their crippled condition. We are again asking the Legislature to support this most worthy enterprise.

The report on State Penal and Charitable Institutions and the report of the committee on State Educational Institutions are found elsewhere in this volume and show that those in charge of these institutions have carried out, as far as they could, the recommendations made last year, and that all of these institutions are in most excellent condition. Careful inspections were

made of these institutions by our State Epidemiologist and our State Sanitary Engineer. This was followed by visits of the sub-committees of the Executice Committee of the State Board of Health.

Report of the South Carolina and Palmetto Sanatoria show that many patients have been admitted during the past year and that $1.62 was the cost per day per capita. There were 35,160 hospital days against 25,382 the year before. The farm and dairy, which furnished the institution with fresh vegetables, farm products, poultry, milk, etc., show that $9,200.00 was the market value of the same.

Mrs. I. L. Cain, as Field Agent for the Sanitarium, has worked unceasingly for the betterment of the condition of the patients at the Sanatarium and each patient has received individual attention. We wish to thank the Legislature for having provided a home for the nurses and a new infirmary. We hope this year to have a building for tuberculous children; also a central heating plant and a silo for the preservation of the food for the cattle.

We wish to call attention to the detailed report contained in this volume of Mr. E. L. Filby, our Sanitary Engineer. Mr. Filby has done a most excellent work in South Carolina and his salary is not commensurate with the quality of the work done. He has received flattering offers from other states and we urge upon the Legislature an increase of his salary.

Mr. J. H. Woodward, our State Inspector of Hotels and Restaurants, has visited each and every hotel and restaurant in the State and the traveling public appreciate his work in the betterment of conditions in the hotels and restaurants of South Carolina.

Chemical analysis of water have been made for cities and municipalities by Dr. F. L. Parker, our Chemist and Bacteriologist. He has not only made these examinations quarterly, as required by law, but also has made many other examinations for which no charge has been made.

A most important work carried out from this office is that of the Epidemiologist, Dr. A. H. Hayden, who, as his report will show, has been untiring in his efforts to prevent the spread of communicable and contagious diseases in South Carolina.

The executive work of the State Board of Health has been carried out in the office of the State Health Officer, and the State Health Officer feels that South Carolina has a system of health protection which compares favorably with that of other states. He also visited other State Health Departments during the past year, has attended health conferences and health associations, and has been honored by request to present a paper before the Vermont State Medical Association on "Immunity Tests and Their Value in Public Health Work." He was also elected Chairman of the Section on Public Health of the Southern Medical Association and President of the State and Provincial Health Authorities of North America, these being the highest honors in the gift of the public health officials of the United States. He was also former chairman of the Section on Public Health of the American Medical Association. The accounts of all the departments of the State Board of Health are accurately kept by Miss E. W. Grieshaber whose efficient bookkeeping has been complimented both by the Comptroller-General and the State Bank Examiner. The large correspondence of this office is conducted through the secretary to the State Health Officer, and the work is well done. The office has not been closed during the past year, except for a few holidays. Diphtheria Anti-toxin, Smallpox Vaccine, and other sera are sent out from this office, entailing a very large amount of correspondence and clerical work.

DIPHTHERIA ANTITOXIN DISTRIBUTORS.

ABBEVILLE COUNTY.

Abbeville .....McMurray Drug Co.
Donalds .....Johnson Drug Co.
Due West .....R. H. Brice Drug Co. Todd Drug Co.

AIKEN COUNTY.

Aiken .....Hall's Pharmacy, W. J. Platt & Co.
Graniteville .....E. E. Platt, W. C. R. Turnbull
Lake View .....Smith's Drug Store
Langley .....Langley Drug Co.
North Augusta .....W. E. Mealing, M. D.
Salley .....Jones Pharmacy
Wagener .....Wagener Drug Co.
Bath .....Bath Pharmacy

ALLENDALE COUNTY.

Allendale .....Farmers Drug Co.

ANDERSON COUNTY.

Belton .....Frierson's Pharmacy, Herton's Pharmacy
Anderson .Bigby's Pharmacy, Peoples Pharmacy, Evans Pharmacy
Honea Path .....Bolt Drug Co.
Iva .....Iva Drug Co.
Pelzer .....W. W. Griffith
Pendelton .....E. G. Evans & Sons
Townville .....J. M. Hobson, M. D.
Williamston .....Guyton Drug Co.

BAMBERG COUNTY.

Bamberg .....Mack's Drug Store
Denmark .....Peoples Pharmacy
Ehrhardt .....Peoples Drug Co.
Olar .....R. & H. Drug Store

BARNWELL COUNTY.

Barnwell .....Best Pharmacy, Mace Drug Co.
Blackville .....Epps Pharmacy
Fairfax .....Fairfax Drug Store
Williston .....J. M. Smith & Son

BEAUFORT COUNTY.

Beaufort .....C. G. Luther
Port Royal .....M. B. Cope

BERKELEY COUNTY.

Moncks Corner .....Moncks Corner Pharmacy
St. Stephen .....T. J. Boykin

CALHOUN COUNTY.

St. Matthews .....Fair's Pharmacy
Fort Motte .....J. A. Woodley, M. D.

CHARLESTON COUNTY.

Charleston .....Roper Hospital, Paragon Drug Co. G. W. Aimar & Co. Frierson Drug Co., Jno. A. McFall, C. F. Schewettmann & Son, Paragon Drug Co., Zeigler's Pharmacy.

Mt. Pleasant .....H. L. Wacker

CHEROKEE COUNTY.

Blacksburg .....Iron City Pharmacy

Gaffney .....Gaffney Drug Co.

CHESTER COUNTY.

Chester .....Standard Pharmacy, Chester Drug Co.

Great Falls .....Republic Pharmacy

CHESTERFIELD COUNTY.

Cheraw .....T. E. Wannamaker & Son

Chesterfield .....D. H. Laney

Jefferson .....Kenningston's Pharmacy

McBee .....Corner Drug Co.

Pageland .....Kennington's Pharmacy

Ruby .....Ruby Drug Co. Kennington's Pharmacy

CLARENDON COUNTY.

Manning .....Dickson's Drug Store

Paxville .....Thomas W. Gunter

Summerton .....Palmetto Drug Co., Summerton Drug Co.

Turbeville .....C. E. Gambel

New Zion .....E. B. Gamble, M. D.

COLLETON COUNTY.

Walterboro .....John M. Kline, Walterboro Drug Co.

DARLINTON COUNTY.

Darlington .....Hill's Drug Store, McFall's Drug Store

Lamar .....Palmetto Drug Co.

Hartsville .....Corner Drug Co., Boyd-Powe Drug Co.

DILLON COUNTY.

Dillon .....Evans Pharmacy, Moody Drug Co.

Latta .....Peoples Drug Co.

Page's Mill .....Smith's Pharmacy

DORCHESTER COUNTY.

St. George .....P. M. Judy

Summerville .....Tupper Pharmacy Co.

EDGEFIELD COUNTY.

Edgefield .....C. A. Bird

Johnston .....Peoples Drug Co.

FAIRFIELD COUNTY.

Ridgeway .....Ridgeway Pharmacy

Winnsboro .....J. H. McMaster & Co.

FLORENCE COUNTY.

Florence .....F. U. Lake Drug Co.
Lake City .....Lake City Drug Co., W. S. Lynch
Timmonsville .....Marvin Drug Co., Cole Drug Co.
Pamplico .....Peoples Drug Store
Olanta .....Farmers & Merchants Drug Co.

GEORGETOWN COUNTY.

Georgetown .....Atlantic Coast Lumber Corp., Iseman Drug Co.
Andrews .....Thompson's Drug Co., Hogan's Drug Store

GREENVILLE COUNTY.

Fountain Inn .....Redick's Pharmacy
Greenville .....Bolt Drug Co., Armstrong Pharmacy, Carpenter Bros., L. H. Strainger, Doster Bros. & Bruce, Reynolds & Earle.
Greer .....The Greer Drug Co., Corner Drug Co.
Piedmont .....Suber Drug Co.
Simpsonville .....Simpsonville Drug Co.

GREENWOOD COUNTY.

Greenwood .....Harris Drug Co., Greenwood Drug Co.
Ninety-Six .....Holmes Pharmacy
Ware Shoals .....Ware Shoals Mfg. Co. (Drug Dep't)
Troy .....Troy Drug Store

HAMPTON COUNTY.

Estill .....Estill Pharmacy
Hampton .....Chas. A. Rush

HORRY COUNTY.

Conway .....Platts Pharmacy, Horry Drug Co., Conway Drug Co.
Aynor .....Aynor Drug Store
Loris .....Loris Pharmacy

JASPER COUNTY.

Ridgeland .....Tanner's Pharmacy

KERSHAW COUNTY.

Bethune .....Bethune Drug Co.
Camden .....W. R. Zemp
Kershaw .....Heyes & Gregory

LANCASTER COUNTY.

Heath Springs ..Timmons Drug Co., Heath Springs Pharmacy, W. T. Stover & Sons.
Heath Springs .....Timmons Drug Co.
Kershaw .....Hays and Gregory
Lancaster .....Standard Drug Store

LAURENS COUNTY.

Clinton .....Kellers Drug Store
Gray Court .....Gray Court Drug Store
Laurens ...Laurens Drug Co., Powe Drug Store, Putnam's Drug Store
Cross Hill .....Cross Hill Pharmacy, J. H. Miller, M. D.

LEE COUNTY.

Bishopville .....Law's Drug Store, Parker Drug Co.

LEXINGTON COUNTY.

Batesburg .....Ridgell Drug Co.
Chapin .....J. W. Eargle
Leesville .....Able Drug Co.
Lexington ....Riley Drug Co., Palace Drug Co., Harmon Drug Co.
Pelion .....D. R. Kneece
Swansea .....Johnson's Pharmacy, Livingston Pharmacy, Swansea Drug Co.
New Brookland .....Whetsell's Drug Store

MCCORMICK COUNTY.

McCormick .....Chas. F. Bird

MARION COUNTY.

Marion .....J. S. Davis
Mullins .....Palace Drug Co., Kirby's Pharmacy
Nichols .....Nichols Pharmacy

MARLBORO COUNTY.

Bennettsville .....Douglass & Breeden
Blenheim .....Napier's Drug Co.
Clio .....Clio Drug Co.
McColl .....Moore Drug Co.

NEWBERRY COUNTY.

Little Mountain .....J. M. Sease
Newberry ....Newberry Drug Co., Gilder & Weeks, Mayes Drug Store
Prosperity .....Prosperity Drug Co.
Whitmire .....Whitmire Drug Co.

OCONEE COUNTY.

Clemson College .....L. C. Martin
Fair Play .....W. C. Mayes
Walhalla .....Peoples Pharmacy, Bell's Drug Store
Westminster .....Frierson's Drug Store, Crystal Drug Co.

ORANGEBURG COUNTY.

Branchville, Oliver Drug Co., Noble Drug Store, Pipkin Pharmacy
Elloree .....P. L. Felder
Eutawville .....E. O. Horger

North ..... Peoples Drug Co.
Orangeburg ..... Lowman Drug Co., Wannamaker Drug Co.
Springfield ..... Farmers Drug Store, Edisto Drug Co.
Neeses ..... Williams Drug Store
Bowman ..... Bowman Drug Co.

PICKENS COUNTY.

Central ..... Carolina Drug Co.
Easley ..... Friersons Drug Store, Palmetto Pharmacy
Liberty ..... Hunter's Pharmacy
Pickens ..... Pickens Drug Co.

RICHLAND COUNTY.

Columbia ..... Blanding Street Drug Store, McGregor's Drug Store, Taylor Drug Co., Wingfield Pharmacy.
Columbia Hospital .... Heinitish's Drug Store, Waverly Drug Co.
Blythewood ..... M. Langford

SALUDA COUNTY.

Ridge Spring ..... Ridge Drug Co.
Saluda ..... Saluda Drug Co.

SPARTANBURG COUNTY.

Campobello ..... Campobello Drug Co.
Converse ..... Peoples Drug Co.
Cowpens ..... Cowpens Drug Co.
Inman ..... Inman Drug Co.
Landrum ..... Landrum Drug Co.
Pacolet ..... Pacolet Mfg. Co.
Spartanburg ..... Arthur Irwin, Ligon's Drug Store, Henry's Drug Store, Todd Drug Co., Copes Drug Store
Woodruff ..... Workman & Stemson, O. E. Westmoreland
Greer ..... Greer Drug Co.
Clifton ..... Taylor Drug Co.

SUMTER COUNTY.

Mayesville ..... The Peoples Pharmacy
Sumter ..... Sibert's Drug Store, Mitchell's Drug Store, McElveen Drug Co.

UNION COUNTY.

Jonesville ..... Jonesville Drug Store
Union ... Palmetto Pharmacy, People's Drug Store, City Pharmacy

WILLIAMSBURG COUNTY.

Johnsonville ..... Johnsonville Drug Co.
Kingstree ..... Kingstree Drug Co.

YORK COUNTY.

Clover ..... Clover Drug Co.
Fort Mill ..... Lytles Drug Co.
Rock Hill ..... Rock Hill Drug Co.
Sharon ..... Sims Drug Co.
York ..... York Drug Co.
Hickory Grove ..... Hood Drug Co.

THE FOLLOWING TABLE BY COUNTIES SHOWS THE NUMBER OF CASES DIAGNOSED AS DIPHTHERIA RECEIVING ANTITOXIN.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Abbeville	....	....	7	2	....	....	....	2	6	4	6	3	30
Aiken	4	....	....	....	....	4	....	2	10	11	11	15	57
Allendale	....	....	....	....	....	....	....	....	....	....	1	1	2
Anderson	6	5	2	11	6	4	8	15	22	30	18	9	136
Bamberg	....	7	....	....	4	....	....	....	....	....	....	....	11
Barnwell	2	8	1	....	1	....	....	3	7	4	11	....	37
Beaufort	....	....	....	....	2	....	....	....	3	2	11	4	22
Berkeley	....	....	....	....	....	....	....	....	....	....	....	....	....
Calhoun	....	1	....	....	....	....	....	6	1	3	....	....	11
Charleston	12	2	8	1	6	1	5	5	4	13	13	14	84
Cherokee	4	....	1	3	....	....	....	....	4	....	15	1	28
Chester	7	....	....	....	6	4	....	5	29	52	10	14	127
Chesterfield	2	....	....	12	2	....	6	8	....	7	4	....	41
Clarendon	....	5	3	1	5	....	5	....	2	8	3	1	33
Colleton	2	1	....	4	....	....	1	1	5	10	6	....	30
Darlington	2	2	3	1	3	....	....	....	4	....	4	....	19
Dillon	8	....	....	11	....	3	....	....	4	7	6	1	40
Dorchester	1	....	3	1	4	....	1	2	2	6	3	....	23
Edgefield	....	....	....	....	....	2	....	....	....	13	2	3	20
Fairfield	....	....	....	....	4	....	....	....	....	3	5	4	16
Florence	1	1	....	12	1	5	6	8	23	41	25	8	131
Georgetown	1	....	....	....	....	1	....	1	....	....	....	....	3
Greenville	11	25	12	....	....	6	....	7	32	49	24	7	173
Greenwood	....	6	2	5	....	1	3	7	18	15	14	5	76
Hampton	....	....	2	....	1	1	....	....	....	7	1	2	14
Horry	2	....	....	....	7	....	3	....	....	....	23	2	37
Jasper	....	....	....	....	....	....	....	....	2	....	....	4	6
Kershaw	....	2	....	14	....	....	2	13	57	24	20	8	140
Lancaster	....	....	....	....	....	4	....	....	5	1	8	....	18
Laurens	....	5	....	6	4	1	1	....	1	....	5	6	29
Lee	1	....	....	....	3	....	7	4	5	19	....	5	44
Lexington	....	2	8	7	8	1	1	5	4	5	1	10	52
McCormick	....	....	....	....	....	....	....	....	....	2	2	....	4
Marion	1	....	....	2	10	2	....	3	....	....	4	4	26
Marlboro	5	....	....	5	1	....	....	7	2	6	....	5	31
Newberry	1	4	....	....	....	....	2	....	....	2	13	1	23
Oconee	....	5	1	8	....	3	1	3	9	1	8	1	40
Orangeburg	....	....	9	2	9	....	....	3	1	23	12	2	61
Pickens	3	6	....	....	10	....	....	....	9	....	2	....	30
Richland	17	6	5	1	11	1	1	9	1	8	27	13	100
Saluda	....	2	1	4	....	....	2	11	....	6	4	....	30
Spartanburg	22	5	14	13	25	10	....	16	34	47	41	23	250
Sumter	3	7	2	4	1	1	2	16	27	17	8	28	116
Union	5	....	....	....	1	....	....	....	7	11	5	7	36
Williamsburg	1	....	....	....	....	....	....	....	1	3	12	1	18
York	....	3	....	4	10	8	1	18	13	19	11	5	92
Total	....	....	....	....	....	....	....	....	....	....	....	....	2 347

THE EXPENDITURES FOR DIPHTHERIA ANTITOXIN AS COMPARED WITH 1923 ARE AS FOLLOWS.

1923 Month	Cost	1924 Month	Cost
January	$ 1,273 50	January	$ 705 00
February	971 00	February	584 00
March	403 50	March	479 00
April	635 50	April	701 50
May	352 00	May	840 50
June	353 00	June	326 00
July	644 50	July	249 00
August	906 50	August	962 00
September	1,307 50	September	1,896 00
October	3,205 00	October	2,664 00
November	2,020 50	November	2,470 00
December	1,020 50	December	1,159 00
Total	$ 13,093 00	Total	$ 13,036 00

TYPHOID VACCINE

Amount spent for typhoid vaccine in 1924, $8,700.00.

THE FOLLOWING AMOUNT OF SMALLPOX VACCINE WAS DISTRIBUTED BY QUARTERS.

1923		1924	
First Quarter	$1,560 00	First Quarter	$3,304 60
Second Quarter	776 90	Second Quarter	1,170 00
Third Quarter	1,950 00	Third Quarter	1,170 00
Fourth Quarter	3,510 00	Fourth Quarter	3,510 00
Total	$7,796 90	Total	$9,154 60

The price paid was 6 1-2 cent per tube and the number distributed 140,840.

MINUTES

March 27, 1924.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary at 10:30 a. m., March 27, 1924, with the following members present: Dr. Robert Wilson, Jr., Chairman, Dr. Robt. A. Marsh, Dr. C. C. Gambrell, Dr. W. R. Wallace, Dr. W. M. Lester, Dr. S. C. Calder, Dr. E. A. Hines and the Secretary.

The Minutes of the last meeting were read and approved.

Reports from the various departments were read.

Dr. Gambrell moved that Mrs. Cain be authorized to make preliminary plans for the improvement of the grounds of the South Carolina Sanatorium and submit such plans to the Board for its approval. It was also moved that Mrs. Cain, Field Sec-

retary of the South Carolina Tuberculosis Sanatorium, be directed from time to time to tabulate data in regard to ex-patients of the South Carolina Sanatorium and to keep in communication with ex-patients; and further that she be authorized to employ such stenographic help as can be furnished by the stenographers employed in the various departments of the State Board of Health to do the necessary clerical work in making this tabulation.

Dr. Lester moved that the salaries of the nurses at the Sanatorium be raised, if upon investigation the funds available for personal services be found to be sufficient.

Mrs. Cain was authorized to purchase an Overland automobile.

A committee, consisting of Dr. Lester and Dr. Hayne, was appointed to draw up suitable resolutions in regard to the death of Dr. W. P. Cornell, and it was directed that a page of the Minutes be set aside for a copy of these resolutions, and that a copy of the same be sent to his family and to the press.

Dr. W. A. Boyd was duly elected as Orthopedic Surgeon for the State Board of Health to carry out the provisions of the appropriation for crippled children.

Dr. B. R. Jacobs, Director of the National Cereal Products Laboratories, Washington, D. C., appeared before the Board with Miss Ballard, Home Demonstration Agent from Winthrop College, in regard to having the Board pass suitable regulations governing the sale of self-rising flour in South Carolina. After a full discussion of the matter, it was decided that the Board would call a public hearing on the subject some time in July, where all parties interested could be heard.

There being no further business, the Board adjourned to meet in Orangeburg, S. C., at the regular annual meeting of the South Carolina State Medical Association.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

April 16, 1924.

The regular Annual Meeting of the State Board of Health with the South Carolina Medical Association was held in Orange-

burg, S. C., April 16, 1924, with the following members present: Dr. Robert Wilson, Jr., Chairman, Dr. R. A. Marsh, Dr. C. C. Gambrell, Dr. E. A. Hines, Dr. W. R. Wallace, Dr. Wm. Egleston, Dr. W. M. Lester, Dr. S. C. Calder and the Secretary.

Minutes of the last meeting were read and approved.

The matter of the election of a pediatrician to take the place of Dr. W. P. Cornell, deceased, was taken up by the Board and on motion by Dr. Gambrell it was decided to postpone this election until the next regular meeting of the Board.

It was suggested by the State Health Officer that a tuberculosis survey be made of the State, provided it could be done without expense to the State, an offer having been made by the National Tuberculosis Association to make such survey. This was approved by the Board.

On motion of Dr. Marsh the Chairman appointed the following Committee as a Building Committee to have charge of the erection of a Woman's Infirmary and residence for Dr. Cooper at State Park: Drs. Marsh, Egleston and Hayne.

After some discussion, the following Committee was appointed to revise the Sanitary Code: Dr. Hayne, Dr. Hayden, Miss Ada Taylor Graham, Head of the Bureau of Child Hygiene, and the Attorney-General as adviser. In making any changes in the Code it was moved that a draft of such changes be sent to each member of the Executive Committee for their approval.

The status of Dr. E. A. Early was discussed and his relationship with the Department of Rural Sanitation, and the following Committee was appointed to meet at an early date to confer with Dr. Riser and Dr. Early in regard to the proper carrying on of the work of the Dental clinics: Dr. Hayne, Dr. Gambrell and Dr. Wallace.

The Board then went into the election of officers for the coming year, which resulted as follows: Dr. Robert Wilson, Jr., Chairman, Dr. James A. Hayne, State Health Officer and Executive Secretary.

There being no further business, the meeting adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.
Secretary.

Columbia, S. C., July 15, 1924.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary at 10 a. m., July 15, 1924, with the following members present: Dr. Robert A. Marsh, Dr. C. C. Gambrell, Dr. Wm. Egleston, Dr. Wm. M. Lester, Dr. W. R. Wallace, Dr. E. A. Hines, Dr. S. C. Calder, and the Secretary.

Minutes of the last meeting were read and approved.

Reports from the various departments were read.

Report was read from the special committee on Dental Clinics. It was moved and seconded that no salary should be paid to any employee of the State Board of Health from whom a monthly report was required where such report was not made.

Dr. C. C. Gambrell moved that the Superintendent of the South Carolina Tuberculosis Sanatorium be instructed that recommendations made by the various members of the Board who made inspections should be carried out between the meetings of the Board, and that if such recommendations are not carried out a report should be made and a reasonable excuse offered why these recommendations had not been carried out. It was moved by Dr. Egleston, and seconded, that the superintendent furnish a list of equipment for the new infirmary and buildings to the building committee, and that the building committee immediately take steps to purchase the same, so that there would be no delay in the opening of the infirmary. It was moved and seconded that the sanitary engineer be directed to give an estimate of the cost in connection with water connection between South Carolina Sanatorium and Palmetto Sanatorium, and also an estimate of the cost of sewerage connection.

It was moved and seconded that the committee on Code, consisting of the State Health Officer, the sanitary engineer and the epidemiologist of the State Board of Health, make a report at the October meeting as to their progress on the revision of the Code.

There being no further business, the meeting adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

October 2, 1924.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary at 10 a. m., October 2, 1924, with the following members present: Dr. Robert Wilson, Dr. C. C. Gambrell, Dr. Robert A. Marsh, Dr. William Egleston, Dr. E. A. Hines, Dr. W. M. Lester, Dr. S. C. Calder, Dr. W. R. Wallace, and the Secretary.

The Minutes of the last meeting were read and approved.

Quarterly reports of the departments covering the third quarter of the year were read from Malaria Control, Bureau of Vital Statistics, Hygienic Laboratory, Rural Sanitation, South Carolina Sanatorium and the Bureau of Child Hygiene. After the reading of these reports Dr. Gambrell moved that the Registrar of Vital Statistics in giving vital statistics should separate the white and black and also, if possible, get comparative statements from other states.

A motion was made that Mrs. Cain be directed to get data on tuberculosis sanatoria from other states as to the length of time patients were allowed to stay at the sanatoria.

A report was read from the Sanitary Engineer asking for an increase of salary and giving as a reason that the salaries paid in other states were higher than that paid in this State. It was moved by Dr. Lester that the report be received as information and no action was taken at that time.

It was moved and carried that the editor of the State Medical Journal be furnished with a digest of health matters each month.

Reports from the Committee on State Penal and Charitable Institutions and the Committee on State Educational Institutions were read. These reports were received as information and copies of them were directed to be sent to the heads of the Institutions interested.

A letter was read from the Vermont State Medical Society asking Dr. Hayne, the State Health Officer, to read a paper before their society. Dr. Hayne was authorized by the Board to proceed to Burlington, Vt., and read the paper as requested.

There being no further business, the meeting adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C., December 18, 1924.

The regular quarterly meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, Columbia, S. C., December 18, 1924, with the following members present: Dr. Robert Wilson, Chairman, Dr. C. C. Gambrell, Dr. Wm. Egleston, Dr. E. A. Hines, Dr. S. C. Calder, Dr. W. R. Wallace, Dr. W. M. Lester, and the Secretary.

The Minutes of the last meeting were read and approved.

Annual reports from all the departments of the State Board of Health were read and a full discussion took place in regard to these various reports.

Mr. E. L. Filby, State Sanitary Engineer, appeared before the Board and read to them letters from the Florida State Board of Health offering him a salary of $3200 per annum, to be increased to $3600 after six months' service. The Board directed that the Secretary write to the Budget Commission setting forth the fact that Mr. Filby's services were invaluable to the State and that unless his salary was raised we would lose his services.

The Board took action on the death of Dr. Robert A. Marsh, which occurred , and appointed the following committee to pass suitable resolutions: Drs. Egleston, Hayne, and Hines.

The Board expressed satisfaction with the departments for the work done during the year.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

REPORT OF COMMITTEE ON SANITARY INSPECTION OF STATE PENAL AND CHARITABLE INSTITUTIONS.

Chester, S. C., September 11,1924.

Executive Committee State Board of Health, Columbia, S. C.

Gentlemen: On September 4, 1924, I made the sanitary inspection of the State Hospital for the Insane, and a brief report of observation is hereto attached:

The grounds are very well cared for, there being very little trash and loose paper found except rags and strips of cloth in trees and on buildings in neighborhood of colored female building. Most of the buildings are exceptionally clean and sanitary. In the old building for colored women the floors, tables and bedding were clean and plumbing seemed in fair condition. Yet under the crowded conditions that obtain, the antiquated style of architecture, and absence of screens, the living conditions will always be far from satisfactory. The only relief here is the complete remodeling of this building.

There will soon be completed a new building at State Park which will take care of about two hundred and fifty colored patients, which will make over five hundred out there. The new building is the very latest idea in construction, and with the well arranged building already there, will make the handling of patients easier and more sanitary. The idea of eventually segregating all colored patients at State Park is to be heartily commended as environments are here well adapted to this kind of hospital.

All buildings which were constructed or remodeled in comparatively recent years are in good condition. The tubercular wards are nicely arranged and well kept. The surgical, dental and laboratory departments are well equipped and seem to be doing excellent work.

The vocational idea seems to be growing and a large per cent of the patients are employed in some kind of work or training. There is also ample space for outside games and athletic contests.

The food and supply rooms were in satisfactory condition. As far as able to observe, the food was ample and of sufficient variety and well handled. The milk is better handled than that of most dairies supplying the average municipalities. The milk supply is from an accredited herd of beautiful Holsteins, which are cared for in well arranged barns with cement floor. The milk is chilled immediately, transported to hospital, and pasteurized, which gives a milk supply with a very low bacterial count. This milk is used by patients who are weak and debilitated, there not being a sufficient supply for general use for all patients. The farm supplies some vegetables in season and also some beef.

Practically throughout the hospital in all wards there is overcrowding, even to twenty-five or thirty per cent. The great need for these unfortunate mental invalids is more housing space.

Respectfully submitted,
W. R. WALLACE.

To the Chairman and Members of the Executive Committee of the State Board of Health.

Gentlemen: I wish to report to you my findings of the sanitary condition of the Penitentiary as it appeared to me on September 1, 1924, at which time I made our annual inspection. I found the entire plant in as good condition as it can be kept under the existing circumstances. It is an absolute impossibility to keep the old buildings and the old furnishings clean and sanitary. The only hope of ever having a clean and sanitary plant is to build a new one out and out.

In the main cell building we found the beds and mattresses and bed springs in a deplorable condition; in many instances the springs are held up only by plank put across the bed and the men sleep on them with only a very thin, worn-out mattress to rest on, which is almost equivalent to sleeping on the plank. The mattresses are very soiled and worn out. 90% of all I examined should be burned, thereby killing many vermin which abound in this building. I spoke personally to the Superintendent about the matter of the sleeping quarters and he told me it was a matter of deep concern to him, but he was without authority or funds with which to remedy the condition. I found also in this building that certain prisoners were allowed to do their own cooking and preparation of their food in their cells on a kerosene stove. I don't think this is sanitary or at all conducive to good health; therefore, don't think it should be allowed. Many cells are occupied by two prisoners and I think this is not sanitary and no doubt in many cases leads to indecent and immoral habits. The toilets in this building are badly in need of repair. Much plumbing work is needed here, as well as throughout the entire plant.

The dining room and kitchen are both well screened and are as clean and as sanitary as they can be made in the present building.

We were glad to see that a clean room with lockers has been provided for the clean clothing.

Still there has not been any provision made for a hospital diet, which we urged in our former reports. We think this is important and should receive consideration. One step in this direction, however, is the operation of a poultry yard, the products of which go toward feeding the sick.

The hospital is clean and neatly kept, but here too we found the need of comfortable mattresses. The records in the hospital are kept orderly and are complete. Two tents have been provided and erected in the yard for the care of the bedridden T. B. patients. We commend the officials for this.

The Woman's ward is in the same condition as has been reported to you on previous occasions. Conditions here are hopeless. 55 colored and 7 white women comprise the population of this ward. The buildings occupied by the chair manufacturing company were all found to be kept clean. The old abandoned building should at least have the top and all the wooden part of it taken down, as the rotten timbers are constantly falling and endangering life. Twenty milch cows now comprise the herd. The mule and cow pen and hog lot cannot be kept clean as it is too small.

I think it is the duty of your Board to furnish the institution with all of the Neosalvarsan that is required to treat all syphilitic prisoners. I was informed by Dr. White that he had been refused this. Certainly a matron should be had in the woman's ward, and some provision made for the care of the sick women. Facilities to classify prisoners as to age and crime should be had, thereby segregating the young from the hardened and hopeless criminal.

All of the above I respectfully submit to you for your consideration.

ROBT. A. MARSH, M. D.

SANITARY INSPECTION ON THE CONFEDERATE SOLDIERS' HOME

By E. A. Hines, M. D., Seneca, S. C.

I inspected the Old Soldiers' Home, September 18, 1924. The Institution is at present under the care of Major W. H.

Stewart, Commandant. There are fifty-seven (57) old soldiers in the institution at the present time. In 1922 there were seventy-six (76); in 1923 fifty-three (53). During 1923 twenty-three (23) died, and twenty (20) deaths up to the present time in 1924. The oldest inmate is ninety-two, the youngest seventy-seven, and the average age of the entire number is eighty-two. Only one old soldier was seriously ill at the time of our visit, however. It is clear from the enormous death rate that there will be no use for the institution for the present purpose in a few years, inasmuch as the applicant to have been in the Confederate service even in the last days of the war must necessarily be about seventy-seven.

There is little to criticize unfavorably about this institution or its hospital since its complete remodeling along the most approved sanitary lines a few years ago. Every department, including the hospital, has an ample corps of trained attendants. About the only suggestion we have to make is with reference to the dairy barn, which should have, for esthetic reasons at least, a new coat of paint. We dined at the institution, partaking of the same food served to the old soldiers, and found it well prepared and a properly balanced ration. We observed the trays in the hospital wards, and found that the patients were served in a creditable manner.

SANITARY INSPECTION OF THE STATE REFORMATORY FOR NEGRO BOYS

By E. A. Hines, M. D., Seneca, S. C.

I inspected the State Reformatory for Negro Boys September 18, 1924. Since our last visit we noted many improvements, especially along sanitary lines. For instance, a new dairy, a new cow barn, a new horse and mule barn. New toilet facilities of the septic tank type have been installed according to plans furnished by Mr. Filby, Engineer for the State Board of Health. A new shoe shop with proper machinery has been added to the equipment. Very few boys were in the infirmary at the time of our visit, and these for minor ailments only. We noted with pleasure the cleanliness of the beds and bedding, and the work of re-enameling the iron bedsteads which adds very much to the sanitary appearance of the infirmary and dormitory. The large

single dormitory is subject at time to great overcrowding. It is three stories in height, and is entirely out of date for such a purpose. There were one hundred and thirty-nine (139) boys at the time of our visit. We are glad to note this marked reduction in number inasmuch the cubic air space has an estimate of only one hundred and twenty (120). It is practically impossible to modernize this building. The menace in case of fire is considerable in this type of structure. The toilets in this dormitory, while kept in good condition, are unslightly and should be torn out and new ones added. Upon inquiry, I found that no dental observation is obtainable at this institution. We recommend that inasmuch as the State is now providing such facilities for a number of other institutions, that this service be extended to include this one also. For an enlarged policy of medical and sociological studies on the part of the State, this institution offers an interesting field for further development along this line. More equipment should be provided for vocational training for these boys.

We wish to commend the superintendent, Mr. S. A. Lindsay, for his wise foresight and accomplishments at the institution during the fourteen years of his incumbency with very limited means.

REPORT INSPECTION STATE REFORMATORY FOR BOYS AT FLORENCE, S. C.

Dr. R. A. Marsh and E. L. Filby

The State Reformatory for Boys at Florence was inspected by the foregoing on July 28th. Conditions at the Institution were found to be excellent. All the dormitories were clean and in order. A spirit of pride in sanitary conditions prevailed among the officers and the boys. New steel lockers were noticed in some of the buildings and more should be installed this year as we suggested last report. The men was attractive and the new cafeteria style of serving seemed to remedy the hardships of order in a large dining room. The room has now been divided into several small dining rooms which can be made semi-private and thus better discipline perserved. The institution is now running its own private water supply as we formerly advised and saving considerable money thereby. A new band stand and

drill room has been built. The dairy was in excellent shape and the attendant knew the rules for decent sanitary operation. The general health of the boys is excellent. We are glad to report that all the boys have been vaccinated for smallpox and also typhoid. A resident dentist has been taking care of the boys' teeth. A marked reduction in the venereal disease rate at the institution has been noted.

We advise that the institution take steps to obtain a larger water storage tank, as the present one is too small as to capacity and height. A filter should be built by the boys and the water in the swimming pool recirculated and treated with copper sulphate as an algacide. A central heating plant and a new school building are badly needed. Attention is directed to the fact that the hospital facilities of the institution are housed in a frame structure on the second floor—a fire risk that is dangerous because of construction.

Commendation should be rendered to Mr. Martin, Superintendent, and his staff for the excellent general sanitary condition of the institution.

Respectfully submitted,

ROBT. A. MARSH, M. D.,
E. L. FILBY.

SANITARY INSPECTION OF SOUTH CAROLINA INDUSTRIAL SCHOOL FOR GIRLS

By E. A. Hines, M. D., Seneca, S: C.

I inspected the State Industrial School for Girls September 18, 1924. There are fifty-two (52) girls in the school at the present time. Every department of this institution is kept scrupously clean. The incidence of acute illness amounts to very little. On the other hand, the menace of venereal diseases upon admittance is considerable. The physician in attendance handles the situation well, but a detention infirmary would add much to the facilities for observation and treatment of this class of cases, as well as other communicable diseases. It was noted with pleasure that a dental chair had been installed since our last visit. This is a very essential forward step in view of the increasing importance of oral infections, and such foresight reflects credit upon the State. The provision for an adequate

water supply at all times is limited owing to the lack of a reservoir. At the time of our visit the electric pump was out of order, and the continuous water supply interrupted thereby. An urgent necessity for this splendid institution is a sanitary dairy barn, and poultry equipment. Vocational training for these girls is carried on in an admirable way by splendidly equipped teachers, but the State should make a larger appropriation for this type of teaching. The girls are not only taught the rudiments of a good general education, but have an excellent course in the basic principles of domestic science. They are also taught gardening and the care of poultry, the principles of dairying, and many other practical subjects. All of this is conducive to the health of these students, as well as of inestimable value towards their moral and physical reclamation. The girls are detained for a period of about two years, and a most excellent follow-up system is carried on after they leave the institution. We wish to heartily commend the authorities for the continued improvement in the management of the school. We regretted to note the serious illness of the Superintendent, Miss Burgess, at the time of our visit.

To the Chairman and Members of the Executive Committee of the State Board of Health.

Gentlemen: I made the usual annual sanitary inspection of the State Training School at Clinton on August 28th. My first impression was the lack of room. The care of the feeble-minded of this State is a great undertaking and it is my opinion that every Legislator should post himself on the magnitude of the situation and the wonderful possibilities of the institution. Each Legislator should know something of what per cent of our population are subjects fit for this institution and then post themselves too, as to the work being done here and the wonderful possibilities of making a self-sustaining citizenship of many who are now wards of the State. Today there are about 300 in this institution and as many applications on file as they now have inhabitants.

The dormitories Nos. 1, 2 and 3 are all beautifully clean, and no criticism could be in order. The toilets throughout are in perfect order and very sanitary.

The present kitchen and dining room are temporary wooden buildings, all well screened and clean. The laundry building is clean but it is inadequate to take care of the increasing population, and it should be enlarged as clean clothes and bedding, etc., go a long way towards sanitation. A great need of the institution is a hospital, as there is no provision now for the very sick.

The need of a school building is very evident; industrial shops should be a part of all training schools. One of the absolute needs from a strictly sanitary point of view of the institution is a properly fitted up sewerage system and one septic tank some distance from the building. As it is now, the sewerage is disposed of very near the building and the soil is red clay. Naturally the absorption is very slow and very incomplete. This stagnant water from the sewerage thereby will become a breeding point for mosquitoes. There is no very acute sickness at this time, no epidemic this summer at all, and only two cases of tuberculosis. These are kept in a very crudely improvised shack away from the rest of the inmates. I think it would be a benefit for the health of these inmates if shade trees were planted out in front of the building and over the campus, and we would suggest that the planting of paper shell pecan trees, as they make a beautiful shade and the nuts are rich in food values.

It was my pleasure to see the dinner prepared. It looked wholesome and nicely cooked, and was nutritious in character. The grounds, generally speaking, about the premises were clean and orderly except for the debris from the buildings that are now in process of erection. At this time three new dormitories are being built.

All of the pupils are vaccinated against smallpox and are given typhoid prophylaxis on their entrance into the institution. Wassermans are sometimes made. We recommend that Wassermans be made in all cases. The teeth of the pupils are kept in good condition by a Dentist employed for this purpose.

Paved walks connecting the buildings are essential from a health standpoint in wet weather, and this would help to keep the buildings clean by the children not bringing the wet mud in on their feet. We beg to commend the Superintendent, Dr. Whitten, for his very painstaking work. We hope that the Legislature will co-operate with him in making this school an

ideal place. This can be made ideal only by making such appropriation as is compensatory with the absolute needs. He should have such buildings as are necessary, so as to classify the inmates as to age and mentality.

All of the above I submit for your consideration.

Respectfully,

ROBERT A. MARSH, M. D.

REPORT OF COMMITTEE ON SANITARY INSPECTION OF STATE SCHOOLS AND COLLEGES.

December 17, 1924.

The examinations of the various Educational Institutions of the State have been made either by your committee or for them by the Epidemiologist and the Sanitary Engineer of the Board, or by all of them.

These examinations have disclosed in general very satisfactory conditions in the several institutions from a sanitary and hygienic standpoint, and it is gratifying to know that none of them have to record any serious epidemic outbreaks. Moreover, the care of the health of the student body has become of first importance as it should be with those in charge of our institutions of learning, and the most earnest co-operation is given your committee in every effort looking to improvement in sanitary and hygienic matters at all the institutions.

Winthrop College: We repeat our urgent recommendations for general screening at this college. There is much dissatisfaction among the parents of the pupils there that the rooms are not screened, and since screening is very general among all our people, rich and poor, it is properly looked upon as an elementary health measure.

We also repeat our recommendation that all the help at Winthrop be required to have certificates from the laboratory of the State Board of Health stating that they are not typhoid carriers. Recommendations for the removal of surface toilets at the dairy, for improved garbage disposal, for better toilets for the male help, and for a contagious ward for the hospital. are among the matters further touched on and to be brought to the attention of the proper authorities.

South Carolina Military Academy: The suggestion of last year is renewed as to this institution that it be screened throughout the barracks and class-room and everywhere. There can't be any discussion in this day and time of the pressing necessity of this fundamental safeguard. Otherwise the Citadel is in first-class shape.

The Medical College: This institution is in excellent condition from a sanitary standpoint.

Clemson College: The many suggested improvements of two years since have been carried out at Clemson College and its inspection this year showed it in excellent shape from a sanitary standpoint. Suggestions are made for the discarding of the surface privies in use at a few of the negro cabins. Attention is called to the fact that there is over-crowding in the rooms and that is quite unsanitary and should not be done, regardless of the desire to accommodate a large number of students.

South Carolina University: There is much improvement to record at this institution, but there is also much to be desired and some things seem imperatively needed. There is urgent need for larger hospital accomodations; double the present capacity would not be too much. Some of the dormitories need additional and improved toilet and bath facilities. All of the dormitories should be connected to a central heating system.

A. & M. College, Orangeburg: This college shows a very satisfactory condition on the whole and is evidently well managed and closely supervised. The screening here, as at almost all the institutions, is allowed to get in bad repair, and there are improvements of a minor nature that might be made in the bath rooms and toilets.

School for Deaf and Blind: The recommendations for betterment at this school are as follows:

1. Abandonment of the work building as being dangerous. Replacing with better.

2. Increase in dairy herd to supply double amount of milk which is needed.

3. Entire reconstruction of negro building which is in poor condition.

4. Refrigerating and bakery plants.

De La Howe Institute: This institution needs a better dairy barn and a large increase in its herd for the milk required. It urgently needs an infirmary for the care of its sick and their separation from the well. It needs a refrigerating plant also.

Your Committee strongly recommends thorough screening at all these institutions throughout—this being the outstanding need.

WM. EGLESTON, M. D.,
S. C. CALDER, Ph. D.,
C. C. GAMBRELL, M. D.,
W. M. LESTER, M. D.

REPORT ON INSPECTION CLEMSON COLLEGE,1924

Inspection of Clemson College was made on Friday, October 10th. Various members of the faculty and staff accompanied the writer. The water supply filtration plant was in its usual excellent shape. A test to determine if the chlorinator was operating at the right rate showed that it was. This supplies most of the buildings and residences of the college. The dormitories are supplied from a "spring" which is in reality a well sunk over an old spring outcrop in the rear of the barracks. Water is pumped from here continuously. The well proper is nearly filled with roots from nearby trees. These roots come through the brick. Wells scattered about the campus have been greatly improved with proper tops and pumps.

Most of the buildings on the campus are connected to the sewerage system. However a few negro cabins are still using a bucket type privy, which if possible, should be replaced with the old fixture taken out when the barracks toilets were remodeled. The barracks toilets are now in excellent shape; they have been placed directly against the barracks and not detached as they formerly were. Barracks No. 3 still have the detached toilets. All the toilets visited were clean and for the most part free from odor. Tile or concrete flooring is used.

The housing situation is still bad. Overcrowding still continues but the usual plea is made that it is better to overcrowd than to turn away. Some of the rooms designed for two students now have three boys. In No. 3 Barracks the rooms have mostly three boys. Each room has two windows and transom over the door. In one barracks there were three boys in a room 16 by 12.

Beds are all single beds. No double decker beds are used. No lockers are available for the boys to keep their clothing, etc., in. Wooden racks are used. With three in a room little privacy may be had. Number 1 Barracks have been repainted, etc., this year and No. 2 and No. 3 last year. Barracks are wood throughout—brick veneer. Stairways of wood. Many of the drinking bubblers have been abandoned. Halls seemed clean and rooms neat.

The dining hall and kitchen, commissary, etc., are the pride of the college, and justly so. It is recommended that all institution heads in South Carolina spend two days a year at Clemson for instruction in commissary, etc., management. The repainting of the mess hall has given it a wonderfully cleanly appearance. It is hoped that its simple white, cleanly aspect will not be marred by decorations. The table linen was excellent. They are laundered as often as needed. The kitchen help were all in white and the suits were clean. There is no limit to the amount of clean linen they can get. All help are physically examined twice a year for infectious diseases. The bakery and meat rooms are models. The use of Monel metal utensils has eliminated any chance of food poisoning by chemical combination with the utensils. The entire place is cleaned three times a day. The kitchen, is the show place of the institution. The manager is to be highly complimented. Other institutions should study Clemson's system.

The dairy has been improved since my last inspection. Milk rooms have been completed on the sides of the dairy barns. Entrance is by double screened doors. Both rooms have concrete floors. One room is provided with steam and hot and cold water for cleansing purposes. About 90 gallons of milk are obtained per day. Rooms for the convenience of the dairymen have been cleaned, put in order and are being used. Paper towels are supplied. The milk is taken to the dairy department room at the college proper, where it is pasteurized at 145 degrees for 30 minutes. Ice cream and some butter are made here but the majority of the milk goes to the mess hall. About 1400 glasses of milk are daily available to the 1100 students. On the milk question it is surprising to notice that nearly 5,000 cans of 8 pounds each of milk are bought and used by the college during the year for coffee, puddings, cooking, etc. This is equivalent to nearly 10,000

gallons of average milk. South Carolina should be producing this. The dairy room has been newly painted and was in excellent shape. A refrigerating plant is needed as the ice has to be hauled from Seneca. All utensils are sterilized by live steam in a steam chest. The milk after it is pasteurized is cooled by cool water going through the coils and is then carted to the mess department refrigerators, for chilling.

Other foods served are obtained from the best possible sources. All meat served is Western dressed meat—U. S. Government inspected and passed. Butter is likewise purchased from outside the State. Some hogs are fattened on the table scraps and killed in the winter. Menus are attractive and food plentiful. Service in the dining room is excellent.

The Y. M. C. A. cafeteria is not in as good shape as it might be. A little more attention to neatness and keeping food and clothing separate would improve conditions. Milk sold at the Y. is from three different sources—none of which is pasteurized. Ice cream is purchased from Easley. Native killed meats are cooked. Country butter is used. Most of the candies served are package goods. More system is needed. The Y. swimming pool seemed to be in fairly good shape. The filter was in operation and the water changed when determined by the chemistry department. Very few students utilize this valuable part of the Y. Everyone should learn to swim. No chlorine is used to sterilize the water.

Garbage is stored in cans in excellent closed compartments. Trash and cans, etc., are dumped into the Seneca River. Manure from the barns is hauled off daily and spread on the fields. The laundry was in its usual excellent condition. The plentiful use of white paint is quite noticeable. The hospital and hotel were not inspected, owing to lack of time.

Respectfully submitted,

E. L. FILBY.

SANITARY INSPECTION OF CLEMSON COLLEGE

By A. H. Hayden, *M. D.*

Dr. James A. Hayne, State Health Officer, and Members of the Executive Committee of the State Board of Health of South Carolina.

Gentlemen: At the request of Dr. Wm. Egleston, Chairman of the Committee on the inspection of State Educational Institu-

tions, I made a thorough inspection of Clemson College on October 15, 1924, and beg to report as follows:

Grounds. Throughout present the same attractive and well kept appearance that they have for many years past.

The Hospital is kept in the same orderly and attractive manner for which it has been noted for the past number of years. Among the improvements noted are as follows: two trained nurses now on duty instead of one—one day nurse and one night nurse. The fireplace in the operating room, which I have very urgently requested to be closed in my reports for the past two years, has been finally closed and this menace of the possible entrance of infected matter to this room is now a thing of the past. A Bell telephone has also been placed in this building, which allows of immediate communication with all parts of the institution and the grounds which, until the installation of this phone, had not been possible. During the past year there have been treated in this hospital 566 hospital or bed cases and 11,214 cases, with a student body of approximately 1,000 in number, an increase, I understand, of 100 over last year's enrollment. Among the cases above noted there were 58 cases of measles, 195 cases mumps, 1 case typhoid fever, 1 case Hodgkins disease, 3 cases pneumonia, 1 case scarlet fever, 9 cases orchitis following mumps, 2 cases venereal disease, and 1 case pulmonary tuberculosis.

Dairy Barn. In its usual excellent condition, showing care and well keeping of the stock and barns. An improvement noted was an attractive roof built over the silos, making the weighing of food rations to animals much more accurate, etc., than heretofore. Milk room o. k. in every respect.

Hog Barn in excellent condition.

Dairy Building well kept and in excellent condition generally, having been much improved by repainting of the inside, the general appearance being improved in every way.

Hotel. Well kept and in excellent condition, except for the fact that the screen doors, as has been noted each year, are not kept by the authorities in the order in which the building should be, making it anything but fly-proof. The pantry, we noted, has boards out and a number of large holes in the floor, giving ample and very easy ingress to any flies which may choose to enter. As noted last year, the kitchen was very much in need of a new floor.

Chapel. Since last year the Chapel has been very materially enlarged and improved in every way, including replacing of the old benches with new, very substantial, opera chairs. The enlargement of this Chapel now gives seating capacity, I understand, for about 2,000 instead of only 1,000, which I was told was the seating capacity of the Chapel before this improvement was made.

Barracks. A number of improvements were noted, such as improvements in toilet arrangements in some buildings, repairs, etc.

Open Wells. These during the past year or so have been improved to some extent by placing in the same pumps, which give a better protection to the water supply therein. However, I can see no excuse for the existence of such wells on the Clemson property, but concerning them and the ideas which seem to keep them in existence, like those in connection with the obsolete and dangerous open surface toilets, we can only say, not "Ephraim is joined to his idols, let him alone," but if possible, separate him from his idols.

Toilets. For the use of servants the old open surface toilets have been supplanted by the pail system of toilets. This system is by no means devoid of danger, as your Committee knows, and should, I think, be immediately abandoned as connection with the sewerage of Clemson College can easily be made as a substitute for this system now in use.

Garbage Cans. These it was noted had considerable bad odor about them through the accumulation of some debris around the cans within a metallic container that was built for their reception. This was due altogether to carelessness on the part of the kitchen help in emptying kitchen slops in these utensils. The covers, etc., are in bad repair, making them by no means fly-proof. This condition should be immediately looked into and the necessary improvements requested should be at once made.

Y. M. C. A. Cafeteria. I regret to say that the cafeteria was by no means as well kept and as cleanly as it has been in the past. Garbage cans without the back door, two in number, were filled to overflowing and of exceedingly bad odor due to putrescent material in the inside. Feathers were noted on top of these cans

and scattered around them and blood stains on top, which seemed to indicate that some person was responsible for cleaning fowls possibly and using these cans as tables on which to rest the carcasses in process of dressing. Screens in bad order; in need of immediate repairing. Floors, etc., in the kitchen were not swept and scoured and kept in as cleanly manner as they should be. This condition I called to the attention of the Local Board of Health through the Health Officer who accompanied me in this inspection.

Swimming Pool in the Y. M. C. A. building did not present the usual attractive appearance of the past. Considerable apparent sediment was noted in the bottom of the tank and innumberable scraps of paper on the bottom beneath the water, and also considerable frothy, foamy matter on the surface of the water, all of which indicated proper care was not being given this pool.

Gymnasium. Was not attractive, due to its untidy appearance. Particularly noticeable were cobwebs and dust accumulated on the window screens, etc.

Mess Hall. It was noted that this Mess Hall has been given a coat or more of white paint very recently and that an entirely new lighting system has been installed, making for this Hall quite an addition to its usual attractiveness. As during every past year in which I have inspected Clemson College, the report on this Hall is necessarily short and all that can be said about it is that it seems to receive the utmost care and attention; contains everything needed or desirable, except possibly it may in the near future have to be enlarged, and indicates every thought for the care, comfort and convenience of the health of the student body.

Laundry. As usual, in excellent condition and seems in every way adequate and satisfactory in filling the needs for which it was designed.

Kitchen, Pantry and Commissary, as has been noticed for two years past, are in a "spick and span" condition and in every way attractive. The Commissary is supplied with only the very best and most expensive foodstuffs procurable on the American market. While it would be impossible to note every article and comment upon its quality, I mention a few to give your Commit-

tee an idea of the high grade and quality of the articles furnished the student body from this department;—Pillsbury's best flour; Van Camp and Campbell's soups; Libby's canned products; Brookdale canned fruits; Morris' canned meats; Heintz's well known products; None-Such grits, Kellogg's corn flakes, etc.; Geneva brand canned goods, which are the highest priced canned goods, I believe, on the market; Carnation milk, high grade vegetables, cauliflower, celery, Swift's best meat products, etc. The kitchen, pantry and refrigerating plant are kept in an ideal cleanly condition, the refrigerating plant, it may be noticed, being one of the very best extant. Dressers, tables, walls, etc., are scrubbed three times a day, after each meal, and when a banquet or late supper is put on extra it is given the fourth scrubbing after this extra repast. Besides this thorough scrubbing, these furnishings for the pantry and kitchen are bleached once a week, the same care and attention relative to cleanliness and sanitary conditions being given all utensils in these departments. It is noticed that even the sink faucets are polished every day under the orders of Mr. Holcomb, the efficient mess officer. The floors are also scrubbed three times a day. During the past year have been installed vegetable containers made of Monel metal, which is the only metal not affected by acids, etc. Brand new kitchen ranges have also been installed this year.

Bake Shop is in a most cleanly and sanitary condition possible, even the legs of the tables, as was noticed, being scrubbed daily, as regularly as the table tops.

Meat Room. In this room was noted the most minute care and inspection of everything served from therein. To give an idea of the cleanliness and care used that the faculty and student body should have only the best and safest in the meat line, it was, without attention being called, noted that the livers being cut for service were thoroughly washed before the outer skin was removed and subjected to another thorough washing after this skin was taken off of them. It was also noticed during my stay in this meat room that a large liver was thrown aside unfit for use and on examination and close inspection I found that this was discarded on account of suspicious looking spots thereon, apparently diseased tissue, notwithstanding that it bore the official stamp of government inspection. This particular liver was consigned to the slop jar and immediately dis-

posed of. It will be noted that this liver, together with other very beautiful and attractive and wholesome meats, was purchased from one of the best and most reliable meat houses in America.

On the whole, it may be said that the culinary department in connection with Clemson College is so efficiently managed apparently that it is easily recognized as one of the most sanitary, cleanly and attractive institutions of the kind that could possibly be found anywhere in the country. Expressed in as few words as possible, it is ideal.

Respectfully submitted,
A. H. HAYDEN, M. D.,
Epidemiologist, State Board of Health.

SANITARY INSPECTION OF INSTITUTION FOR DEAF AND BLIND AT CEDAR SPRING, S. C.

By A. H. Hayden, M. D.

Dr. James A. Hayne, State Health Officer, and Members of the Executive Committee of the State Board of Health.

Gentlemen: Under instructions from the Committee on State Educational Institutions, I visited and thoroughly inspected the Institute for the Deaf and Blind at Cedar Spring, S. C., on October 14, 1924, finding everything, as usual, in a most excellent condition. A number of improvements already made, and being made, were also noticed. Among these may be mentioned the ground is already broken for the erection of a hospital, which is very much needed. Connecting this building with the primary building and also the girls' dormitory will be a covered way, which in inclement weather will protect the sick ones and others going to and from this building, which is, of course, very much to be desired.

There are at present 302 children in this Institution, but the Superintendent informs me that he expects in a very short time the number will be increased to about 315, which will fill the buildings to their utmost capacity.

The primary building, dormitory, dining room, kitchen, pantry, etc., are noted for their cleanly and orderly condition.

School Rooms are o. k. in every respect.

Girls' and Teachers' Dormitory. This dormitory has been repainted on the outside and the building is now of very attractive appearance.

Cold Storage. There is no such provision at this Institution at present but a cold storage room and an ice plant are among the urgent needs of this Institution. The fact is, this seems to be an imperative need and should be supplied to all State Institutions of this kind or character.

A Gymnasium and Dairy equipment are among the very urgent needs if the development and general health and good physical condition of the children are to be kept up to a standard which is necessary to the growing child. This is easily realized to be among the great needs of this Institution when the number of undernourished children that are in this Institution is noticed.

Respectfully submitted,

A. H. HAYDEN, M. D.,
Epidemiologist, State Board of Health.

REPORT ON INSPECTION OF SCHOOL FOR DEAF AND BLIND CEDAR SPRING, S. C.

Accompanied by Dr. Walker, Superintendent of the School the writer visited the school on October 8th. The school had been in session about a week. Everything in the dormitories were in excellent shape for the white children. None of the rooms are screened. Each student has their own bed, towels, toothbrush, etc. The dormitories are well arranged and planned so there is very little tendency to crowd. Toilet facilities are excellent. Hot water is available all day long. The need of the institution in the dormitories is for steel lockers as now some of the students have to keep trunks, etc., in their rooms. Water supply is from the Cedar Spring which is bacterially tested every few months by the State Laboratory. Sewage disposal is by dilution into a small stream near the institution. The institution has erected since my last inspection a 50,000 gallon overhead tower which with the small old tank gives them ample reserve. The Primary building has a separate kitchen and dining room. The kitchen has a wood floor except around the stove which is of concrete. If funds permit a heavy tile floor should be put in for sanitary reasons. The present floor was clean and in order.

Kitchen and dining room were well screened. A drinking bubbler is on each floor. The limit of this building is 88 children and the limit has been reached. No one sleeps above the second floor of this building and a night outside watchman and matron inside guard against any fire risk.

In the Girls' and Teachers' Dormitories there are 83 students and the teachers. The smallest children are on the top floor. Toilet facilities are ample—the lavoratories are tiled but not screened. None of the dormitories are screened. Cylindrical iron fire escapes of the slide type are available opening from the toilets. Lockers for the students' clothes, etc., are needed. Nightly fire inspections guard against the fire risk.

In the Main or Administration building is a kitchen and dining room for 132 children and their teachers. The kitchen was in excellent shape, as were the pantries, refrigerators and store rooms. Flies were present in some numbers in the kitchen and helps dining room. Even though the place is well screened they seem to get in. More effort to eliminate them should be put forth by the kitchen help. Ice has to be hauled from Spartanburg and a refrigerating plant is needed. The dining room was very attractively arranged and the linen and utensils spotless. Above the first floor are some dormitory rooms. One room was noticed with six boys, the floor space was 15x20 but three windows helped in ventilation. No pupils are in their room during the day. An automatic fire alarm system is available and a lady stays with the pupils all the time—acting as "mother." The larger boys are on the third floor.

All children are given a thorough physical examination upon coming to the school, they are then vaccinated against smallpox, innoculated for typhoid and receive dental treatment. The dentist comes every week from Spartanburg for corrective work. No charge is made for this at the time of operation. The health of the children has in the past been excellent. A new hospital is being built so that all medicines may be given from one point and isolation rooms provided. All buildings including the new hospital being erected are heated by steam from a central heating plant. The institution also has its own laundry.

Food for the students is purchased from various firms. Meat is obtained from city inspected sources. Milk is supplied by the school cows. The school has 13 cows of which 9 are now giving

25 gallons per day for 325 people. This is just about one glass of milk per person per day. In the opinion of the writer this should be doubled at once. The dairy barn is an old wooden building but it does have a cement floor and the floor was clean. The milk is served raw. Butter is purchased from Spartanburg. The institution has preserved large quantities of fruits which will be used during the present year. Bread is purchased from the city and it is suggested that a small bakery might be utilized both as a source of bread for maintenance and educational work. Hogs are fattened and killed in the winter. The table refuse and garbage is fed to the hogs. Owing to the location of the hog pens it is not easy to keep them clean. It is suggested that they be removed from over the drain from the dairy barn. A move of about 8 feet to either side of the drain would do. The drain should be kept open and free from growing weeds, etc. Some odor was noticed about the hog pens. Sweet and white potatoes are raised by the institution. Cows are T. B. free.

The negro building should be abandoned or entirely worked over. Equipment of this building cannot compare with that of the white building. The kitchen is detached slightly from the main building. Neither it or the dining room is screened. Adjacent to the dining room is the only toilet facilities of the building. There are two rooms each one furnished with 2 stools and two bath tubs. An old open privy stands nearby—this should be eliminated by a decent pit type privy. School rooms are on the second floor and dormitories on the third. Steam heat is supplied from a small heating plant in the building. About 50 pupils and students are accomodated. The beds were in a deplorable condition. There seemed to be no rule as to how many mattresses a student could have. Many beds had no linen at all and the general condition was shocking in comparison to the other buildings. It must be remembered that the school had barely started so that some of these conditions would soon be remedied. Food was being eaten in the dormitories and lockers and trunks were all about.

The work building still stands. It is a menace to life in the event of fire and some day may fall to pieces. For the negro building and the shop a good fire is recommended when all the pupils and teachers are away.

The pupils are given calesthenics every day by an instructor who visits each class room. Basketball courts and tennis courts are available. A small gymnasium building also is available for the use of the students. The grounds are well kept and improvements going on. A new barn is being built for the colored building. Fire plugs scattered about the yards afford some fire protection. Aid from Spartanburg probably can be obtained if necessary. Electric power is available.

Recommendations:

1. Abandonment of the work building, replacing with a modern structure.

2. Increase in dairy herd so that the present amount of milk can be obtained.

3. Abandonment or entire reconstruction of the negro building.

4. Refrigerating and bakery plants.

Respectfully submitted,

E. L. FILBY.

SANITARY INSPECTION OF THE A. & M. COLLEGE, ORANGEBURG, S. C.

By A. H. Hayden, M. D.

Columbia, S. C., October 4, 1924.

Dr. James A. Hayne, Secretary, and Members of the Executive Committee of the State Board of Health.

Gentlemen: Under instructions from your Committee on State Educational Institutions, I have this day made a thorough inspection of the State College at Orangeburg and found everything, as is usual at that Institution, in first class order. The Executive building throughout and all offices were most attractive in appearance, cleanliness and general good order.

I note that the reading rooms in each of the dormitories are well conducted, with a small but well selected variety of literature. Bath rooms throughout these dormitories have been very much improved by addition of conveniences such as hand basins, etc. These buildings are kept in order entirely by the work of

the girls of the Institution, of whom at the present time there are 230 in number, and 200 boys as residents on the campus.

I noted that in each hall there has recently been installed bubble or drinking fountains on each floor. Between the two girls' dormitories there is quite an attractive double bubbler in the yard. This Institution is badly in need of an industrial building, and the rooms in which are conducted sweing classes, etc., are crowded into the girls' dormitories. These, with reading rooms, etc., take up a very large space in these buildings already much too small, which space should be utilized for bed rooms.

Dormitories. The College is in need of two capacious additional dormitories, one for boys and one for girls, as the crowding in both dormitories, especially in that of the boys, is at once noticeable to an inspector, besides being unsanitary on account of the crowd.

Dining Room. Is, as always, most attractive on account of the cleanliness and the order in which it is kept.

Pantry. Has been enlarged to more than double its previous capacity and improved in every way.

The Kitchen. This is made attractive and desirable in every particular. New labor saving machines, all run by electricity, have been installed during the past year, included in which are a modern bread mixer, meat and vegetable cutters, meat slides and bread slicers, besides new sanitary zinc covered tables. In the pantry concrete floors and drains have replaced the old wooden floors, etc., as suggested by me two years ago. The wash sink capacity in the pantry has also been doubled and now meets fully the requirements for extensive dishwashing, etc., that is done in this room.

Horse Barn. Is delapidated, almost beyond repair. A new one is needed.

Milk Barn is o. k. in every respect and absolutely clean. In this yard, on my unannounced visit, it was noted that two men were hard at labor giving a very fine bull a thorough washing with soap and water, which treatment, I understand, is accorded each animal once or twice every week. Between this barn and the milk room I noticed a comparatively recent construction, thoroughly screened, for the purpose of sunning and airing milk utensils.

Milk Room. Spick and span with all modern appliances. Attention is called to the need of slight repairs to the screens in this building.

Hospital. In a most orderly and well-kept condition in every particular. In reporting concerning the hospital I wish to call attention to the fact that this Institution makes it imperative that every student accepted in the Institution be required to be vaccinated, not only against smallpox as required by law, but none are accepted as students of this Institution unless they can produce certificates from reliable authorities stating that they have also been vaccinated against typhoid fever.

Boys' Dormitory. As above mentioned, there is another dormitory for boys badly needed on the ground. There are almost as many boys in one building (200) as there are girls in the two dormitories of the same size and capacity (230).

Teachers' Building. This building at the present is a phantom only and is head-lined in this report simply to emphasize the imperative need of such a building in this Institution. The need is forcibly brought to one's attention when he inspects the dormitories for both boys and girls and realizes, on actual observation, the tremendous amount of room that is taken up in these dormitories for teachers, understanding the fact, as above stated, that there is not nearly enough room in the present dormitories for the accommodation of students.

Fire Protection. Is excellent in every particular. Fire escapes are plentiful, extinguishers have all convenient points and provide ample hose, etc., for immediate use in case fire should break out in these dormitories.

Barber Shop. Is in good condition, and articles, such as lump alum, etc., which was eliminated at the writer's suggestion two years ago, are still conspicuous by their absence.

Y. Building. If it be possible in the near future, or later, such a building would be of a vast amount of benefit to this Institution, relieving the dormitories of much space needed for other purposes and at present taken up with reading rooms, etc.

White Hall. This building is devoted to recitation and class rooms and the Auditorium, in which chapel service is also conducted. This building is in use to its very farthest capacity and will not be large enough to meet the requirements of the

College if even there is a comparatively small increase in the student body in the next few years. In brief, the College has about now outgrown it.

Respectfully submitted,

A. H. HAYDEN, M. D.,
Epidemiologist, State Board of Health.

SANITARY INSPECTION OF DE LA HOWE TRAINING SCHOOL, WILLINGTON, S. C.

By A. H. HAYDEN, M. D.

Dr. James A. Hayne, State Health Officer, and Members of the Executive Committee of the State Board of Health.

Gentlemen: Acting under instructions from your Committee, I, on October 16, 1924, made a thorough inspection of De La Howe Institute, located about four miles from Willington, S. C.

General conditions throughout this Institute are excellent, and the cleanliness of the bed rooms, etc., in connection with the dormitories is particularly noteworthy.

Boys' College. In this building is noted recent repairs to the ceiling and in the near future calsomining of the entire interior will be done. This has been delayed until a new tin roof is placed on this building, which it is contemplated will be done immediately.

Fire Protection. It is pleasing to note that considerably more precautions against fire have been taken since last year at this Institution, fire extinguishers having been placed in every building on the grounds and, as will be more fully noticed later, fire hose also in the main building.

Electric Light Plant. During the past year the power plant, which was not adequate to the needs of the Institution, was burned and an entirely new and well-equipped plant has been installed, or is in process of installation, which will now care for the lighting of all buildings on both sides of the Institution—old and new.

Dairy Barn. I would again call attention to the very urgent need of a proper barn for the housing of the cattle owned by this Institution. The present barn, *so-called*, is really a disgrace, not furnishing even adequate or proper shelter for the cattle

which it is supposed to house. In my report last year I noted the fact that there were not sufficient cows in the dairy of this Institution to furnish adequate milk supply for the inmates. More cows and of better quality are really an urgent need of this Institution if the physical condition of the young children is attempted to be kept up to a normal standard.

Girls College. This is an old building that has recently been re-painted and calsomined and a new tin roof placed on the same. This is a very marked and necessary improvement. Last year your attention was called to this building, particularly with its old shingle roof as a menace to the lives of the inmates should fire occur, which is likely at any time with such a covering on the building.

Dining Room. Is neat and cleanly in every in every particular. Just at present it is going through a process of re-painting, which will add much to the attractiveness of this room.

Kitchen and Pantry in Girls' College are in excellent condition, the kitchen having recently been re-painted, and an entire new range placed for the use of this building.

Sewing Room was, as usual, a busy place, well kept and meeting entirely, I believe, the needs of the Institution.

Laundry. The new boiler and improved laundry equipment, which was in process of installation on my visit last year, are now in place and the laundry about all that could be desired, most attractive in appearance and well capable of meeting the needs of the Institution.

Mule Yard. The old mule barn which stood in a very conspicuous place in front of the buildings on the old site and was rather an eyesore in the approach to the Institution, has recently been moved quite a distance away, re-built and improved in many ways.

Administration Building. This handsome stone edifice which stands on the "new site," is attractive and pleasing in every particular, both within and without. Screens which were recommended last year to be placed in the basement were immediately put in and add much to th protection of the interior from flies, etc. This building has been during the year supplied not only with fire extinguishers, but has fire hose in sufficient quantity and of sufficient capacity to meet the needs in case of fire break-

ing out in the building. Bed rooms in this institution, "spick and span."

Dining Room, Kithen, Pantry, etc., in excellent condition. The exit to the outer premises from this kitchen should be supplied at once with a provision on the outside for a small screened space and an outer screened door, which seems to be necessary to give adequate protection from flies, many of which were noted in this kitchen. This was due apparently to no neglect or carelessness on the part of those responsible for the kitchen, pantry and dining room conditions but from lack of proper protection at the rear door, as noted above.

Urgent Needs. This Institution is urgently in need of an infirmary and dairy barn and a refrigerating plant, all of which are absolutely necessary in a well- conducted Institution of the kind. The cost of ice, the cost of food products, etc., could be very materially lessened if the former could be made on the grounds and the latter properly stored in a properly constructed cold storage room in connection with a refrigerating plant.

Respectfully submitted,

A. H. HAYDEN, M. D.,
Epidemiologist, State Board of Health.

SANITARY INSPECTION OF WINTHROP COLLEGE, ROCK HILL, S. C.

By A. H. Hayden, M. D.

Dr. James A. Hayne, Secretary and Members of the Executive Committee of the State Board of Health.

Gentlemen: Pursuant to instructions, I this day, October 7, 1924, visited and made a thorough inspection of Winthrop College—the grounds, buildings and all activites connected therewith, and beg to submit the following report.

The College generally presents its usual cleanly and attractive appearance and indications generally of an Institution under the care and management of unusual executive ability. There are a few corrections needed, however, which, as we come to them in this report, will be noted.

Main Building. The improvement in this building noted is that class rooms recently used for storage purposes are now being

renovated, repaired, etc., and again called into requisition as class rooms. Throughout the various buildings of the Institution a great deal of flooring which has been much needed, has been put in. Screens which are required by law are conspicuous by their absence in this Institution, the dining room alone being fully screened, and infirmary, toilets, etc., partially screened; that is, having only half screens for the windows. This lack of screening is, I think, of considerable importance as I am advised that there are many mosquitoes on the campus, particularly during the month of June, and I was by the physician requested to see that at the proper time next summer your Board would have a thorough investigation made as to the cause of so many mosquitoes and locate, if possible, their breeding places, etc., with a view to eradicating this nuisance and possible menace to health.

Dining Room. This room is inadequate, the College having outgrown one of this size. The girls are entirely too crowded at meals. Tables designed for 8 now have 12 crowded at them. One of the great inconveniences is that the dishes, notwithstanding they are the largest the College has been able to procure, are designed for food to supply eight persons, while now to supply twelve they have to be refilled at great inconvenience to the dining room and kitchen help, causing also considerable loss of time in the serving of meals. A larger dining room will, of course, call for enlargement of the pantry and kitchen accommodations, which will eventually have to be taken care of if this College continues to grow from year to year as it has in the past year or two. It seems as if it is a matter of importance to look carefully into the question of enlargement of these departments.

Help. It seems as though, in this Institution as in others throughout the State, a matter of very vital importance and one that has been mentioned by me upon several occasions but passed over without action, is that all help in kitchen, pantry and dining hall should be required to give certificates from the Laboratory of the State Board of Health showing that they are not typhoid fever carriers before they are employed. This requirement has never been made by the Collge of any of its help in the culinary department. I would call your attention to five cases of typhoid fever last year, which may have had its origin through neglect of this precaution.

Store Room and Meat Room. It was noticed that the screen doors upon my visit were left wide open and the matron in charge informs me that it is impossible to keep these doors closed as goods are being delivered at all hours of the day, and that the help both at the College and on delivery wagons insist on keeping these doors propped back. Flies in this department, practically immediately under the dining room, makes the access of flies to the dining room a matter very easy at times under certain circumstances. It seems to me imperative that your Committee on your visit insist in no uncertain terms that these conditions should be remedied and, if necessary, that these doors be kept locked and admission granted only by responsible parties on the ringing of the door bell or by notification through some other device.

Laundry. Is O. K. in every respect.

Kitchen Toilets. For the men, while it is in fair condition, the hand-basin connected with it was found to be filthy in the extreme, not fit to cleanse anything in, much less hands that have to be used in the handling of foods. This basin was not only extremely filthy, but contained cigarette stubs, etc. Attention of the authorities was especially called to this condition and they were asked to have some one make daily inspections that these negroes might not be allowed to keep their hand-basins in this condition. Another thing noted was that these helpers around the kitchen had no towels upon which to wipe their hands after washing them, and it was suggested that a plentiful supply of paper towels be furnished in connection with this hand-basin.

Dining Room for Colored Help. In excellent condition and very clean but badly in need of proper screening as the screen door leading thereto is in very bad repair and in fact does not fit the opening which it is intended to protect from the ingress of flies.

Garbage. The garbage back of the storeroom, which it is understood comes from the kitchen, is kept in an open barrel, full to over-running. Utensils here should be immediately provided with proper fitting covers. Receptacles for garbage back of the "Y." were crowded indeed, in bad order, and very sour and repellant to one visiting the space occupied by them. This cafeteria should be required to have a number of proper water-tight covered garbage cans, as any quantity of garbage at the

time of my visit was piled into six leaking barrels which appeared to be of a very crude type resembling potato barrels. Winthrop garbage requirements should not be inferior or less adequate than of any well regulated or sanitary kept city of any size.

"*Y.*" *Cafeteria.* Is in excellent condition but in need of properly constructed arrangements to take the water off its immediate vicinity as during the recent heavy rains the floor was flooded with water from the outside.

Music Hall. In this building rooms that communicate with the South dormitory, five in number, which were formerly used as studios for music lessons, are now used as bed rooms for the girls, thus giving, of course, increased accommodations to a small extent.

Grounds. As usual, in a most well kept and attractive condition.

Milk Room. An entirely new building has been constructed for a milk room during the past year and is equipped with all modern appliances, the old milk room having recently been converted into a residence for attendants.

Dairy Barns and everything connected therewith were in A-1 condition.

Abattoir. Condition all that can be desired. It, however, needs an addition which would enable the butchering of hogs in the same and which addition would be a matter of great convenience for those engaged in the work in this building. At present hogs are butchered at quite a distance away.

Surface Toilets. It is exceedingly regrettable to notice that in the neighborhood of the milk room there are at least six open surface toilets, for which there is not a particle of excuse. These alone warrant a suspicion relative to the possible cause of the cases of typhoid fever recently in this Institution. Besides these six surface toilets around the milk room, there is also an open surface toilet on the premises of the practice home, which is of course a menace to the health of the neighborhood. These surface toilets all should be ordered immediately abandoned and their places supplied with either inexpensive pit toilets or septic tanks. Near the cow barn was also noted barrels containing stagnant water and mosquito larvae in abundance.

Poultry Farm. As usual, in excellent condition.

Training School. Very attractive in every particular, but the toilet in this building should be improved as it lacks adequate ventilation, the windows having no screens and no ropes and weights to the lower sashes, on account of which deficiency in construction the place is practically never ventilated. Perhaps it would be well in the room in which these toilets are located in the basement if small permanent openings, thoroughly well screened, were placed for the purpose of ventilation.

Hospital. Was found in excellent condition in every particular. There is need, however, for an addition to this hospital or construction of a special building for the purpose of caring for contagious and quarantinable diseases should they break out in the student body. And I would suggest that your Committee make inquiry of the physician in charge, Dr. Perry, relative to these matters. That the best should be provided for this particular Institution connected with Winthrop is evident when it is recorded that during the past year, or rather 11 months of the past year (no report from me being included in the following figures) there were cared for and treated 8,996 office cases and 1,097 house cases. Last year's enrollment was 12,058 as against 15,037 students for the present year. Among these house cases were 12 cases of measles; 2 cases of mumps; 12 cases of itch; and 5 cases of typhoid fever. Such cases as these should not be treated in the general wards of a hospital.

Gymnasium. All that can be said of this particular Institution with propriety is that it is A-1 plus.

Science Hall. In which is taught chemistry, biology, physiology, astronomy, etc., has only three small laboratories, in which I am advised at least 300 students do their work in these branches. Laboratory space in this building is inadequate for the number of students of necessity using the same.

In concluding, I would suggest that it is highly desirable that a chair for the teaching of hygiene be established at Winthrop as early as possible. From observation and conversation with both faculty and students, the need for such a course seems to be very thoroughly realized by them both. Such a course, I believe, is taught in all modern, up-to-date colleges, and it is hardly conceivable that an Institution of such importance and

magnificent attainment such as is enjoyed by Winthrop College, should be longer without one.

The above is submitted for your consideration and approval.

A. H. HAYDEN, M. D.,
Epidemiologist, State Board of Health.

SANITARY INSPECTION OF SOUTH CAROLINA UNIVERSITY, COLUMBIA, S. C.

By A. H. Hayden, M. D.

October 4, 1924.

Dr. James A. Hayne, Secretary, and Members of the Executive Committee, South Carolina State Board of Health.

Gentlemen: Acting on instructions from the Committee on sanitary inspections of educational institutions, I have this day, October 3rd, made a thorough inspection of South Carolina University, finding a more marked improvement in conditions than have been made in many years past. The building known as the President's residence, which is now used and occupied by various departments such as students' publication department, extension department, alumni association, and office of the dean of journalism, etc., is still in a deplorable condition of unrepair, etc., as noted in my last year's report to your Committee. The building throughout is in a state of decay and is really unfit for the uses to which it is devoted.

Hospital. Considerable repairs and painting were done to this building last year, as noted in my report, but is still, as in the past, in need of a store room as there is no provision in this building for a place in which to keep supplies. This building throughout, so far as its keeping and conduct are concerned, is capably managed by its matron and is in A-1 condition relative to cleanliness, attractiveness, etc. The University has long since outgrown this building and the moment has arrived when it becomes imperative to greatly enlarge this hospital—it being impossible to abandon it and build one of very much larger dimensions. The truth of this statement is at once realized when it is noted that the hospital sometime since really too small for the accommodation of the young men of the Institution, has no provision whatever since the College became a co-educational Institution for the accommodation of the young ladies needing

to enter the same. To meet the urgent needs of the present and the past year, one of the two wards has been taken from the accommodation for males and placed at the disposal of the female students, which, of course, was absolutely necessary. This taking off of the accommodations for young men has forced upon the Institution bed space and acommodations of exactly one-half the capacity of the male students that they have enjoyed for the past number of years. This said is sufficient without argument to show the imperative need of this building being greatly enlarged or an entirely new building constructed for the purpose of hospital treatment for the student body.

I wish to emphasize again a matter to which your attention was called last year, viz., the necessity of connecting this building at once with the steam plant of the Institution, as during a large portion of the night this building is entirely without heat, due to the fact that no night attendant is present to keep the small heating apparatus going. Without some means be provided to meet this urgent need, in case of seriously sick students, that may happen at any time, which may cause a loss of life, and very severe criticisms and censure of those responsible for the care of sick students in this Institution.

To give some idea of the demands upon the hospital at the University, I will state here the sick records of the hospital for the year beginning September 1, 1923 and ending August 31, 1924: Office treatment—6,420; in Hospital (bed cases) 230, as follows: smallpox cases 1; measles 16; mumps 8; pink eye 32; diarrhoea 18; dysentery 10; conjunctivitvites 44; influenza or grip 5; skin diseases 21; venereal disease 1; malaria 10; "colds" 64. I would ask your very special attention to the fact that there is no ward in this hospital for contagious diseases and it is impossible to imagine that in case of patients suffering from contagious disease that he could be treated in this Institution with safety to others who may be in the building for required treatment.

Chapel. I repeat, in connection with this important provision for the student body, what I noted in my report to you of last year: "The room at present used for chapel purposes has a seating capacity of only 400 and is crowded to the limit and beyond." Considerably more than half of the student body must be excused from attending chapel services for want of

space to accommodate them." The total number of students enrolled up to the present moment, I am advised by the registrar, is 1,050, about 600 of whom reside on the campus. It is easily seen, therefore, that if, as in all educational institutions, attendance upon chapel services is made imperative for all members of the student body, that a duty owed to this particular student body which should not be denied them, is the construction of a modern Church building, of capacity sufficient to meet the needs of the present largely increased student body and the undoubtedly large increase within the next few years, which will inevitably increase.

Dormitories. Many of these dormitories on the campus have been very markedly improved, repairs, which have been an imperative need for many years past having been done, the buildings thoroughly painted and calsomined, and much needed additional baths and toilets having been installed. Some of the dormitories, however, are still much in need of these improvements.

Relative to the heating of these dormitories, it is to be noted that last year it was urgently recommended that all dormitories on the campus be steam heated. This much needed improvement, however, has not met with accomplishment, due to the fact that appropriations made last year by the General Assembly were not sufficient to carry out these recommendations, and students accommodations are still inadequately supplied with conveniences for giving the necessary heat to occupants of these dormitories during the winter months. Those students who can afford to purchase coal, etc., are still compelled to keep it in boxes in their bed rooms on the second or third floors, to which they have to lug it by hand, which occasions a transfer by hand from the ground to the upper stories of these buildings. It is to be noted, however, that some step toward accomplishing the heating of these dormitories has been taken, inasmuch as the main line of pipes has been laid to, or nearly to, several if not all of these dormitories, which eventually will convey heat from the steam plant to the rooms in the same. As noted last year, therefore, the dormitories known as Pinckney, LeGare, Elliott and Harper are without heat.

Professors' Residences on the Campus. It is gratifying to note that steps have been, are now being taken to vastly improve

the condition of these houses, one of the most delapidated of which was the building known as the Davis-McCutcheon house, occupied by families of these two professors. This building is now undergoing the finishing touches following the complete renovation and remodeling of this home and already is making a very handsome appearance notwithstanding the scaffolding is still in place for the purpose of repainting. When completed this will be one of the most attractive buildings on the campus, and it is to be hoped that such improvements may soon follow in the matter of all of the other professors' homes on the campus through liberal appropriations of the coming General Assembly to be devoted to this particular purpose.

Again you are respectfully advise that a large store room is badly needed by the University as they have no provision, nor have they ever had any provision, for storing any material whatever on the ground. Nothing has been done with this same recommendation of last year.

It is to be noted that the dormitories of the University show marked improvement in their keeping, which would indicate that appropriations for this purpose, shortage of which was called to your attention last year, have been made adequate for the furnishing of a sufficient number of janitors.

Y. M. C. A. Building. Somewhat improved by paint, including that of the roof, etc., and is comfortable and well-kept, while of course it is a long, long way from being a modern building for this purpose. The building is still in need of proper bath and boiler facilities, there being no shower bath or hot water for laboratory purposes.

Gymnasium. The most marked and gratifying improvement noted in connection with the University building and grounds is met in this building. The building has been practically renovated, thoroughly improved in every respect and beautifully painted. Practically every recommendation made by me last year has been met and requests for much needed improvements complied with. On the lower floor it is to be noted that another boiler with large capacity has been added, giving ample hot water for all purposes required in this building. On the lower floor many improvements have been made in the Gym. A bath has been installed and a fixing valve so that the one coming first cannot use all of the hot water as heretofore when late comers,

even among the early visitors, were deprived of hot water by its all being used by the first bathers. This is now impossible as fixed water of the proper temperature is supplied all at all times and hours during the day. On this lower floor dressing rooms and lockers have been supplied much more commodiously and separately for the freshmen and senior athletes, and the entire floor space, walls, etc., very much improved and in shipshape order at the present time.

Upstairs on the second floor new ceiling lights, etc., have been placed, ceilings and walls being constructed of some composition of felt. Galleries, as recommended, for visitors have been built and portable seats constructed which, when occasion requires, can be placed in both galleries for spectators and along the floors of the Gym hall next the walls where visitors and spectators can be comfortably and conveniently accommodated whenever desired.

All of the repairs at issuance and improvements noted and many not noted in this short report have so improved the acoustic properties in this hall, which have been so much desired in the past that the old and familiar echoes following speeches that were so prolonged and loud as to make it almost impossible for an instructor to make himself heard by students, are conspicuous now by their total absence. It is to be noted also in connection with this lower hall that in the rear of the building entirely new stair cases have been constructed on both sides, allowing easy and rapid ingress and egress when crowds are present. Shower bath and toilet arrangements have been installed and a small, though very comfortable, room in this building for female students and lady visitors.

A very much desired addition to the Gym is a swimming pool, which at present is considered imperative in all modern educational institutions, the University of South Carolina, so far as your reporter knows, being the only educational institution of any size or not that is without one. There is ample space in the rear of the gymnasium for the construction of such a pool, and it is much to be desired that a swimming pool be furnished this Institution at the earliest possible moment.

Class Rooms. The fact must be again cited that space devoted to class rooms in this Institution is entirely inadequate for the use of the Institution. It was reported last year that this de-

ficiency existed and that "the classes are so over-crowded that numbers of students are forced to stand in the class rooms during lectures and recitations." When it is realized that the student body of last year numbered 875, while this year it numbers 1,050, an increase of 175 students, that this crowding is this year very marked and that without better provisions being made, that to which the student body is entitled cannot be accorded them.

The New Woman's Building. This building, just constructed and occupied for the first time when College opened this year, is a pleasant dream, both in construction, equipment and management. This dream is readily to be realized not to be an idle dream when one enters the building and hears the chatter and laughter of its occupants. This building, however, can by no means accommodate the number of young ladies who are knocking for admission in a woman's building while students of this University. At the present time there are 75 girls occupying this building, which is its full capacity without crowding at the risk of producing conditions which might be, or become, unsanitary. Already the authorities have had to rent a building, which is known as the Annex to the woman's building, where rooms and other accommodations are provided for 18 young ladies. This fact is mentioned to give early notice that request of the authorities of the University for a larger appropriation to accommodate the student body of both sexes, will of necessity be compelled to be made if the growth and success of this State University is to continue.

The above is submitted for your consideration.

Respectfully,

A. H. HAYDEN, M. D.,
Epidemiologist, State Board of Health.

REPORT OF WORK DONE BY DR. A. H. HAYDEN EPIDEMIOLOGIST, STATE BOARD OF HEALTH

Columbia, S. C., December 31, 1924.

To the State Health Officer and the Chairman and Members of the Executive Committee of the State Board of Health:

Gentlemen: In the following report is listed places that I have been called on to visit during the year just now ended. Visits to these communities were occasioned on account of outbreaks of a variety of diseases threatening to become epidemic, to advise with local authorities who were either in doubt or in ignorance concerning health laws, to determine questions of diagnosis where differences in opinion among physicians in matters of diagnosis of quarantinable or reportable diseases existed, to organize, or assist in organization of, local boards of health, etc., etc. Besides such work, requiring travel as above enumerated, my engagements during the past year have included duties in the offices of the State Board of Health too numerous to be here recorded and with which you are all familiar, such as correspondence addressed to parties throughout the State, conversations by phone and wire of an advisory nature, and such other office activities as routine and emergency happenings made necessary.

I would call your attention again to the violation, knowingly and wilfully, in most cases of the health laws of the State and the rules and regulations of your board made mandatory upon the educators of our State for the protection of the health and lives of children under their care, and to which the vast majority of teachers, principals and superintendents pay not the slightest heed, treating the same, as more than one has remarked to me, "as a joke." The compulsory vaccination law of the State against smallpox is violated to a greater or less degree by well nigh all of the school authorities, all of whom claim exemption from any responsibility for its enforcement. As to Rule 14, mentioning diseases, "Quarantinable for School Purposes; Barred from School Twenty-One Days," which include practically all the diseases of childhood, the majority of children in the rural districts at least being never seen by a physician when suffering with such infections; and Rule 15, "Minor Diseases to be Ex-

cluded During Illness," which includes tonsilitis, itch, lice, impetigo contagiosa, favus, etc., seem to have never been heard of by teachers, principals of schools and superintendents generally, and are not as a rule heeded by those few who know of these rules save by the few schools in the larger cities of the State.

In his annual report for 1923 the State Health Officer (page 11) made an "urgent request" to the General Assembly relative to steps to be taken for the enforcement of the compulsory vaccination law in which he said, "We feel that we should have the most hearty cooperation from the county superintendents of education in this work," in accord with which "urgent request" no action whatever has been taken. May I suggest the importance of petitioning the General Assembly, as early as possible after that body convenes, to take action not only in the matter of compulsory vaccination against smallpox alone, but to take such steps as they may deem effective to make some person, or persons, in the educational department of our State responsible for the enforcement of all health laws, rules and regulations, which have already been, and may hereafter be, enacted for the preservation and protection of the health and lives of the school and other children of our State. That the needed attention would be accorded these matters by the General Assembly, I have no doubt if your Committee would arrange to send a committee of your selection to bring them to the attention of the proper committees of the General Assembly.

In closing may I suggest that in considering this report you would consider the advisability of including inoculation against typhoid fever and dyphtheria as a requirement before admitting children into the schools of the State, and also the enactment of a law requiring a clean bill of health from the Hygienic Laboratory of the State Board of Health so far as being a carrier of typhoid is concerned before any domestic help can be employed by any institution, educational or otherwise, being in whole or in part maintained by the appropriation of State monies.

January 5—Columbia, S. C. Inspecting contractors' sanitary arrangements on complaint of citizens.

January 2—Columbia, S. C. Seeing cases with City physicians for the purpose of diagnosis (smallpox).

January 3-16—Columbia, S. C. Vaccinated 1,000, or more, persons against smallpox.

January 19-20—Trip to Marion, S. C., to diagnose case suspected to be smallpox with physician in rural district.

January 21—Trip to Smiley and Crocketville, S. C., to investigate outbreak of smallpox diagnosed chickenpox by local doctor. Proved to be epidemic of smallpox.

January 22-23—Florence S. C. To diagnose suspected case of smallpox.

January 26-27—Sumter, S. C. To investigate and determine cause of outbreak of typhoid fever and examine dairies, milk supplies, etc.

February 4—Trip to Fechtig, S. C., to investigate outbreak of typhoid fever and determine focus of infection.

February 5— Hampton and Varnville, S. C., to inquire into reported failure to quarantine Measles and Whoopingcough and keep cases out of the schools.

February 9—Van Wyck, S. C. To investigate smallpox outbreak and enforce vaccination in three schools.

February 14—Sumter, S. C. To inspect abattoir of W. C. Boyle.

February 20—Plum Branch, S. C., to diagnose suspected cases of smallpox and enforce quarantine and vaccination of contacts.

February 22-23—Seivern and Wagener. To hold autopsy and determine if possible, cause of death of a child, one of 16 or 18 seriously sick with no symptoms to denote cause. (Full report on file.)

February 24-25—Meriwether, S. C. To investigate and diagnose cases of smallpox and enforce quarantine and vaccination.

February 29—Sumter, S. C. To inspect City abattoir and abattoir of W. C. Boyle Co.

March 10—Swansea, S. C. To diagnose suspected cases of cerebrospinal meningitis and make lumbar puncture and administer serum.

March 14—Walterboro, S. C. To investigate reported outbreak of measles and reason for request of local health for U. S. Government to furnish hospital tents "for contacts," which request he claimed not to have made. There was no epidemic of measles.

March 18—New Brookland and Cayce, S. C., to ivestigate and diagnose outbreak of smallpox.

March 19—Spartanburg, S. C. To investigate smallpox outbreak in vicinity of Inman, S. C., at request of sheriff.

March 19—Inman, S. C. To investigate smallpox outbreak.

March 22—Columbia, S. C. Inspecting drainage on Sims Avenue near Epworth Orphanage with members of City Council, City Board of Health, City Engineer and County authorities with a view of correction, changes for improvement of conditions.

March 24-25—Branchville, S. C. To address public meeting on sanitation and hygiene.

March 25-26—Hemingway, S. C. To make sanitary inspection of town and advise with local authorities.

April 2—Eastover, S. C. To enforce quarantine and have arrests made for violations with officials of Columbia Hospital.

April 3—Columbia, S. C. Consultation with Columbia Hospital officials (County Health Officers).

April 3-4—Georgetown, S. C. To enforce vaccination of contacts and quarantine of cases of smallpox and contacts of bridge construction gang.

April 5—Eastover, S. C. and vicinity, to enforce quarantine and prosecute parties breaking same with the officers (County health) of Columbia Hospital.

April 7—Pontiac and vicinity to enforce vaccination in schools and diagnose a case of smallpox.

April 14—Leesville, S. C. To diagnose suspected cases of smallpox.

April 17—Orangeburg, S. C. In attendance State Public Health Association Meeting.

April 21—Sumter, S. C. To consult with local boards of health on Boyle & Co.'s abattoir.

April 23-25—Marion, S. C. To inspect town with School Improvement and Civic League Associations and deliver addresses.

April 29-30—Lyman, S. C. To investigate outbreak of smallpox reported by mayor of Greer, S. C.

May 1—Horrell Hill, Lykesland and Hopkins, S. C. To give aid to injured in tornado.

May 1-2—Moncks Corner, S. C. To advise with School Improvement and Civic League Associations and deliver addresses.

May 5-12—Geigers Mill, Lexington County, rendering medical and surgical aid to 30-odd tornado sufferers.

May 12-13—Tradesville, S. C., Lancaster County. To enforce quarantine of cases of smallpox in answer to a telegram signed by J. L. Funderberg, R. F. Knight and R. B. Hyler.

May 15-24—Lexington County, attending injured by tornado.

May 21—Ridge Spring, S. C., to advise with City Council and local Board of Health.

May 22—Orangeburg, S. C. To make inspection of meat markets, barber shops, etc. with and by request of County Health Officer.

May 30—Batesburg, S. C. To investigate outbreak of smallpox and enforce quarantine and vaccination at a highway construction camp.

June 3—Edgefield, S. C. To investigate dairies suspected of being connected with an outbreak of typhoid fever and to inspect ponds supposed to be the cause of malarial fever in the vicinity of Edgefield.

June 4-5—Hartsville, S. C., to investigate and determine the cause of an outbreak of typhoid fever four miles in the country.

June 6—Ehrhardt, S. C. To confer with civil authorities and local Board of Health by request.

June 8-17—Columbia, S. C. Daily close investigation to determine foci of infection in case of outbreak of typhoid fever in City and suburbs.

June 17-19—Columbia, S. C. House to house visits to get history of 40-odd cases of typhoid fever in Columbia and vicinity.

June 19—Lexington County to see cases of smallpox with attending physician by request.

June 23-25—Winthrop College, to deliver course of lectures at Summer School, Winthrop College, Institute for Women under the auspices of the Federated Women's Clubs of South Carolina.

June 28—Adams Pond, Richland County, to investigate reported outbreak of smallpox with County Health Officer.

July 2—Camden, S. C. To advise with local Board of Health by request.

July 7-8—Central, S. C. To inspect town and advise with local authorities at the request of the Intendent.

July 12—Bishopville, S. C. By request to advise with City Council and local Board of Health.

July 21—Edgefield, S. C. To investigate into conditions of dairies furnishing town with milk.

July 21-22—Catawba, S. C. To investigate and determine cause of outbreak of typhoid fever.

July 25—Hampton, S. C. By request, to advise with local authorities relative to health conditions, etc., in the town.

July 28-29—Cordesville, S. C. To investigate conditions causing typhoid fever, several being reported as going into Charleston from there.

August 4-5—Eutawville, S. C. To address Chamber of Commerce by request.

August 6—Sumter, S. C. To investigate into cause of cases of typhoid fever by request of the local Board of Health.

August 18—St. Matthews and Starr, S. C., to investigate supposed outbreak of diphtheria and diagnose cases in Starr and vicinity.

August 31—Calhoun Falls, S. C. To determine cause of outbreak of typhoid fever.

September 1—Calhoun Falls, S. C. To determine sources of typhoid infection.

September 5—Aiken, S. C. To investigate and diagnose cases of reported smallpox, enforce vaccination of contacts and establsh quarantine at Beach Island.

September 11—Newberry, S. C. In consultation with town council and local Board of Health relative to cause of outbreak of typhoid fever.

September 18-19—Dillon, S. C. To visit schools with the County Health Officer at his request to diagnose cases and call to the attention of the school authorities the health laws governing schools

September 19—Florence S. C. To address meeting of County Superintendent of Education, School Trustees, principals and teachers of the schools of Florence County.

September 28-29—Bishopville, S. C. To inspect, by request, drainage conditions and to advise relative to enforcement of health laws.

October 3—Orangeburg, S. C. To make annual inspection of State Agricultural and Mechanical College.

October 4—Columbia, S. C. To make annual inspection of the University of South Carolina.

October 6-7—Rock Hill, S. C. To make annual inspection of Winthrop College.

October 9-10—McColl, S. C. To investigate smallpox outbreak, enforce vaccination and quarantine, and address the people of the mill village.

October 13—Donalds, S. C. To advise relative to diphtheria control.

October 14—Cedar Springs, S. C. To make annual inspection of Institution for Deaf and Blind.

October 15—Clemson College, to make annual inspection of school.

October 16—D[illegible]a Howe, to make annual inspection of institute.

October 26-27—Kingstree, S. C. To make sanitary inspection of town with special reference to determining the cause of typhoid fever cases, by request of local health authorities.

October 31—Harleyville, S. C. To investigate reported outbreak of smallpox which proved to be chickenpox.

November 13-14—Investigation and diagnosis of smallpox in Richland County.

November 23-30—New Orleans, La., in attendance upon the public health meeting—section of Southern Medical Association.

December 9-10—Walterboro, S. C. To determine cause of outbreak of typhoid fever.

December 12—Abbeville, S. C. To determine cause of outbreak of typhoid fever in section of city and recommend remedial measures.

December 15-16—Florence and Olanta, to diagnose eruption appearing on a number of children in school at latter place.

December 20—Batesburg, S. C. To advise with local authorities on action to be taken to control smallpox contacts without the city limits.

Respectfully submitted,

A. H. HAYDEN, M. D.,
Epidemiologist, State Board of Health.

ANNUAL REPORT 1924

DIVISION OF MALARIA CONTROL, SOUTH CAROLINA STATE BOARD OF HEALTH

This year witnessed putting into effect a change in the procedure of attacking the malaria problem in the State Hitherto, our activities were directed principally toward assisting towns to solve their malaria problems by doing mosquito control work in the town itself and in the area sufficiently close to the town to be within mosquito flight range. Many demonstrations were made in the State at various towns which proved that from an economical standpoint it paid to eliminate malaria from thickly settled areas by controlling the breeding of malaria mosquitoes.

The International Health Board, from whom financial assistance has been obtained each year, declined to participate any further in town demonstration work, but was willing to participate in a program which had the county as the unit of control instead of the town. Our policy has been not to abandon the town work entirely, but its extension has not been pressed with the same vigor as in former years, largely because we were unable to offer any financial assistance to towns where mosquito control was feasible. In order to continue this work one engineer was assigned to devote all of his time to assist towns in maintaining their drainage districts and in organizing new districts.

In order to prosecute the county work more effectively, a physician was added to the staff to cooperate with those county health officers in the State who deemed their malaria problem of sufficient importance to give it a portion of their attention. Experience in former years indicated that the average county health officer would not devote any time to malaria work, or at least so little of his time as not to make any impression on the problem in the county. This state of affairs appears to be due to the fact that it is difficult for the county health officer to obtain the spectacular results in malaria control work that he obtains in some other phases of health work, such as typhoid inocculation or vaccination against smallpox, and also to the fact that some of the county health officers where malaria work is one of the outstanding health problems, were not familiar with the methods of malaria control, and were not acquainted with

the results that could be accomplished by employing malaria control methods. It seems from the year's work that unless a definite portion of the county health budget is set aside for malaria control work, the health officer will tend to engage in other health activities which he considers will make a better showing, and abstain from undertaking malaria control work.

In the table below are given the number of malaria deaths per hundred thousand by counties. Those counties having a county health organization are indicated with an asterisk. The experimental malaria unit in Georgetown County, maintained last year by the assistance of the International Health Board, has been converted into a county health organization with the assistance of the United State Public Health Service.

TABLE No. 1

MALARIA DEATHS PER 100,000 BY COUNTIES—1916-1923 INCLUSIVE

Rank	County	Deaths per 100,000	Rank	County	Deaths per 100,000
1.	Oconee	0.41	21.	York	10.15
2.	Spartanburg	0.93	22.	Kershaw	10.65
3.	Greenville*	0.99	23.	Lancaster	12.21
4.	Laurens	1.72	24.	Richland	12.40
5.	Anderson*	2.30	25.	Horry	12.85
6.	Greenwood	2.45	26.	Aiken*	13.2
7.	Cherokee*	2.73	27.	Barnwell	15.90
8.	Saluda	2.74	28.	Newberry*	16.55
9.	Union	2.88	29.	Marlboro	17.76
10.	Dillon*	2.98	30.	Florence	18.40
11.	Chesterfield	3.14	31.	Marion*	19.35
12.	Chester	3.38	32.	Dorchester	20.55
13.	Pickens	3.50	33.	Sumter	20.89
14.	Abbeville	3.68	34.	Clarendon	21.20
15.	Edgefield	5.25	35.	Williamsburg	24.0
16.	Lexington	6.32	36.	Bamberg	28.72
17.	Fairfield*	7.40	37.	Charleston*	30.30
18.	McCormick	7.70	38.	Orangeburg*	30.50
19.	Darlington*	9.33	39.	Berkeley	33.60
20.	Lee	9.35	40.	Allendale	34.80

Rank	County	Deaths per 100,000	Rank	County	Deaths per 100,000
41.	Beaufort*	36.0	44.	Calhoun	53.80
42.	Jasper	39.50	45.	Hampton	56.90
43.	Colleton*	50.2	46.	Georgetown* ...	57.0

The International Health Board contributed to the support of two county health units in the State with the definite understanding that malaria control work was to be carried on on a county-wide basis. The counties in which these units were established are Beaufort, and Marion. We did not succeed in obtaining county health officers for these counties until about the first of July, consequently, since the health officers were new to the work and not having done any health work before, not as much has been accomplished in these counties as could be done in a full year's program, however, an encouraging start has been made in both counties and prospects for doing more extensive work next year are bright.

In Georgetown County the United States Public Health Service contributed to the financial support of the county budget with the understanding that malaria control work would be carried on, not however, to the exclusion of other health activities. The health officer in Georgetown was not obtained until the middle of September, so that even less time was available for attacking the county malaria problem in Georgetown than in the other two counties mentioned.

During the latter part of 1923, this Department began a school census survey of eighteen counties in the lower portion of the State, in order to obtain more definite information with reference to the prevalence of malaria in the county itself.

This survey was of great value to the county health officers who assumed their duties about the middle of the year, because it enabled them to form an idea of the location of the malaria in their respective counties, without which it is impracticable to do malaria control work. The school survey is essentially a history index of malaria prevalence obtained by the school children from their parents with reference to the number of cases of malaria in the family during the past two years. The card is filled out in the home by some adult member of the family and is returned to the teacher who forwards the cards to the Health

Department. The teachers cooperate very well, with few exceptions, and much valuable information was collected. The information thus obtained has been supplemented in some instances by blood and spleen examinations, made by the county health officer or by other persons specially assigned to such work. Many more positive results are obtained from the school census card than from blood and spleen examinations, as would be expected. It is probable that some of the cards contain inaccurate information, but the error is so small that it does not destroy the usefulness of this method of obtaining a picture of malaria prevalence.

As illustrating the usefulness of the school census card in collecting malaria focii, a case in the Pee Dee section of Marion County is an example. The cards returned from one of the school districts indicated cases near a brick works. On investigation it was learned that most of the malaria occurred in a group of families living within a half mile of the clay pits supplying material for the brick works. The older portions of the pits contained water and were grown up in vegetation and formed favorable breeding places for mosquitoes.

Large quantities of Quadrimaculatus were found in adjoining stables and houses. The health officer was able to control malaria during the past year at this brick yard by inducing the owner to scatter Paris green over the water surface at weekly intervals. Approximately two weeks after the first application the malaria mosquito population in the stables and buildings was reduced to a negligible quantity. In other counties similar results were obtained. More detailed information appears in the table below, showing the data collected by means of the school census card.

SUMMARY MALARIA SCHOOL CENSUS SOUTH CAROLINA—18 COUNTIES.

County	Number of Districts	Number of Families	Number of Persons	Percent of Families Infected 1923	Percent of Families Infected 1922	Percent of Persons Infected 1923	Percent of Persons Infected 1922	Rural Population	Percent of Population included in census
Aiken	47	1,253	7,467	9.4	18.6	2.4	8.1	41,471	18.0
Allendale	13	218	1,317	18.6	36.5	36.7	18.2	16,098	8.2
Bamberg	17	172	1,068	26.2	48.3	11.3	22.4	20,962	5.1
Beaufort	7	240	1,440	19.2	23.7	9.1	13.3	19,438	7.4
Berkeley	28	343	2,324	26.8	48.0	10.6	25.2	22,269	10.2
Calhoun	9	270	1,624	8.8	29.6	2.4	13.6	18,384	* 8.9
Charleston (White)	15	314	1,855	19.1	24.8	7.0	11.9	40,493	.....
Charleston (Colored)	32	678	3,834	33.7	38.5	17.0	19.6	.....	13.8
Clarendon	17	222	1,475	18.7	28.8	5.5	10.9	34,878	4.2
Colleton	39	654	3,647	21.4	38.8	9.1	20.3	29,897	12.2
Dorchester	16	324	1,900	18.2	33.0	7.8	15.5	16,908	11.2
Fairfield (White)	20	262	1,637	5.8	9.5	1.5	2.9	.....	.....
Fairfield (Colored)	41	976	6,594	7.9	15.0	2.0	5.2	27,159	*30.3
Georgetown (White)	17	540	3,369	20.0	35.8	6.7	14.4	17,137	*35.1
Georgetown (Colored)	17	446	2,657	20.9	33.9	6.7	15.8	.....	.....
Hampton	22	364	2,274	22.8	42.5	6.8	19.9	19,550	11.6
Jasper	11	148	957	18.9	26.4	6 8	10.0	9,868	9.6
Marion	14	721	4,605	11.6	26.2	4.6	12.5	19,829	23.3
Orangeburg	34	821	5,067	22.9	27.9	7.7	13.8	57,617	8.8
Sumter	19	497	3,194	7.6	20.8	2.4	8.0	33,532	9.5
Williamsburg	33	622	4,115	16.6	26.5	4.80	11.2	38,539	10.7
Totals	463	10,085	62,470	16.9	28.5	6.15	12.9	484,029	12.9

*Includes both White and Colored.

This method of obtaining information with reference to malaria prevalence is being employed by county health officers during the present school season in a more intensive manner than was possible to employ in the county before there was a county health officer. On his visit to the school the county health officer makes a talk on malaria and hands the cards to the teacher in person. In this way the interest of the teacher is aroused more effectively than otherwise would be possible and better cooperation is obtained. From the results thus far obtained, it appears probable that there was less malaria during the past year than during the previous year. In this connection it is gratifying to note that there has been a gradual decrease in the malaria death rate in the State since 1916. In the following

table are given the number of deaths attributed by physicians to malaria, since the organization of the Bureau of Vital Statistics.

TABLE NO. 3

MALARIA DEATHS—1916-1923

Year	Deaths
1916	289
1917	287
1918	289
1919	301
1920	254
1921	201
1922	240
1923	102

It should be noted that only the deaths reported by physicians are included in the above table. It does not, therefore, conform with the figures appearing in the United States Census Bureau reports, because in those reports are included many deaths reported by non-medical men. It has been discovered that in some sections of the State there is a marked tendency to report deaths as having been due to malaria whenever the cause of death is doubtful or obscure. This tendency is even observed in the reports of some of the physicians. The presence of malaria is not verified by microscopical examination in more than a fraction of the cases reported by physicians.

During the year an effort has been made to discourage the practice on the part of both physicians and registrars to report doubtful deaths as having been due to malaria. The community from which many malaria deaths are reported suffers an unsavory reputation which does it harm from an economical standpoint. The registrars throughout the State have been instructed not to report doubtful deaths as having been due to malaria and physicians have been urged to verify the diagnosis microscopically whenever practicable, before reporting a death as having been due to malaria.

One of the counties in this State has the reputation of being more malarious than any other county, and we believe it is largely due to the fact that the cause of death is not carefully determined. In the county in question, nearly all of the malaria deaths

were reported by non-medical men. The more widely it becomes known that quinine is the cure for malaria the less will be the number of deaths due to malaria. The number of cases of malaria will not be reduced proportionally as much by the use of quinine as will the number of deaths.

One of the objections we have been obliged to meet in counties in which we planned to do malaria control work was due to the fact that the influential people in the county believed that by advertising that we would attempt to do malaria control work, we admit that malaria was a serious problem in the county and that such an admission would do great damage to the progress of the community. This is cited merely to show the damage from an economical standpoint that is done by reporting malaria deaths when really the death was due to some other cause.

From the beginning it has been realized that the establishment of agricultural drainage districts in the malarious sections of the State has contributed materially to the solution of the State's malaria problem. The establishment of agricultural drainage districts is controlled largely by economic factors. In fact, economic factors play a very important part in the elimination of malaria. In a community in which the standard of living is high, where wages are good, and people live in good houses, there is less malaria than in a region similarly settled and where the population is undernourished and poorly housed. Natural recoveries from malaria occur more frequently in the better fed community. The Department, therefore, is always anxious to cooperate with all the welfare agencies existing in the county, realizing that all the efforts that are devoted to improving the economic status of the population renders the solution of the malaria problem easier.

The work of stimulating the formation of agricultural drainage districts has, therefore, been continued this year as in previous years. County health officers have been encouraged to bring to the attention of people in the county the benefits from the stablishment of drainage districts. Assistance has been rendered county health officers in this work, particularly in Dillon County.

One engineer attached to the staff devotes a large portion of his time to assisting in the promotion of drainage districts. In most malarious sections of the State people are much interested

in the formation of drainage projects, but in many places they are prevented from organizing such districts because many of the people living in the proposed districts are not inspired with confidence in the motives of some of the persons who in the past have endeavored to bring about the organization of the drainage district, or because of the economic situation. This difficulty can at times be met by having a disinterested person of the State Board of Health take an active part in establishing the drainage district. Probably the largest drainage enterprise now being carried on in the State is in the vicinity of Kingstree, comprising portions of Williamsburg, Clarendon and Florence Counties. Interest in the formation of drainage districts has been shown in practically every county in the coastal plain section of the State. Results are expected in Dillon, Marion, Charleston, Berkeley and Beaufort Counties, in the not distant future.

In the counties of Marion, Beaufort and Georgetown, in addition to the malaria work, other health work has been carried on. A more detailed account of this work appears in the report of the Malaria Epidemiologist below:

"Work was begun April 1st by visiting a number of the county health units having a malaria problem, and consulting with the county health officers and inspectors with reference to methods that could be employed in controlling malaria in the county.

The county health officers were instructed in recognizing the characteristic breeding places for Anopheline mosquitoes. Larvae were collected and hatched out, and adult mosquitoes caught for purposes of identification.

In order to make a beginning in solving the rural malaria problem, small rural centers or villages in the counties were selected and surveys made at Ellenton in Aiken County; at Minturn in Dillon County, and at Ravenel and Adams Run in Charleston County, and at other places. These surveys were made with the assistance of the county inspector and one or more engineers from the Malaria Department of the State Board of Health. An estimate of the cost of control measures was prepared for use of the county health officer and the county inspector in obtaining the performance of corrective measures. These measures were usually put into effect by the property owners, and consisted of drainage on a small scale, the stocking of ponds

with minnows, the application of oil and Paris green to breeding areas, and the screening of houses.

The county health officers were encouraged to establish minnow hatcheries, from which minnows could be removed to places in the county where malaria control measures were to be undertaken. Such minnow hatcheries were established in Dillon, Anderson, Aiken and Charleston Counties.

About the first of July two new county health units began work under the direction of the Malaria Department. They were Beaufort and Marion, and on September 15th Georgetown County began work. Instructions similar to those outlined above were given to the new county health officers.

Spot maps were prepared of the counties showing the grouping of malaria cases as reported from the school census cards that were sent out during the previous school year. With the aid of these maps and census cards, the location of the focii of malaria was more rapidly determined. In some instances corrective measures were easily applied which consisted of the spreading of Paris green and oil, and the drainage of some areas. The focii that could not be eliminated with the funds at the command of the county health officer were left for later treatment, and persons living within flight range of such areas were urged to screen their homes and take prophylactic doses of quinine.

With the opening of the schools, the county health officers began educational work with reference to the prevention of malaria. Lectures and talks were given to school children, literature distributed, and moving picture films shown. The collection of data bearing upon the prevalence of malaria was continued by means of the school census card; the cards being distributed by the county health officer to the rural schools.

It was realized that it was important for the new county health units to make as strong a showing the first year as possible, and that in order to accomplish concrete results in the limited time remaining before the end of the year, health activities were not confined to malaria control operations alone, but preventive work was done against typhoid fever, smallpox, diphtheria, tuberculosis and other diseases having a public health significance. Child welfare work was done; baby clinics being held in all three of the counties before the close of the

year, with very gratifying results. The scope of this work is indicated in the statistical report below.

Educational:

Lectures	29
Attendance	2242
Bulletins distributed	8261
Newspaper articles	35
Circular letters	697
Health exhibits	123

Sanitary Inspections:

Private premises	856
Public premises, schools, churches, stores, camps, etc.	58
Special inspection	83

Acute Communicable Disease Control:

Visits to cases, carriers, contacts or suspects	212

Tuberculosis Control:

Number examined	1
Negative	1
Home visits	12

Immunization:

Complete anti-typhoid innoculations	3867
Anti-smallpox vaccinations	816

Child Hygiene:

Cases given advice	17
Office consultations	2
Group conferences	3
Home visits	65
Babies and children examined	443
Examinations	178
Office consultations, mothers	47

School:

Children examined	2412
Found defective	1114
Defects found	1117
Consultations, parents (office and school)	238
Home visits	148

School:—Con.

Talks to classes or drills in hygiene	34
Nutritional classes:	
Cases attending	25

Laboratory Examinations:

Specimens:	
Blood for malaria parasite	18
Feces for parasites	12
Sanitary privies installed:	
Type (a) Septic or L. R. S.	3
Bucket and box	6
Pit	4
Privies restored to sanitary type	77
New sewer connections	2
Wells improved	9
Treatments induced for correction of physical defects:	
In pre-school children	2
In school children	31
In adults	2
Nutritional cases improved	3

Malaria Work:

Homes inspected	77
Homes screened	79
Pond breeding controlled	9
Persons visiting office	676
Clinics held	112
Number examined	2258

Investigations were also made of malaria conditions in counties not having health officers. Surveys were made of mosquito conditions along Wateree River, and corrective measures suggested to be applied."

At the October meeting, the State Board of Health adopted regulations governing the impounding of waters in South Carolina. These regulations have the effect of law. They follow, in all essential respects, the regulations in effect in other states that have adopted regulations on this subject. The number of impounded water projects is increasing and the experience in

the past has been that in practically every instance, immediately after the impounding of large bodies of water, there has been a rather sharp outbreak of malaria during the two or three years following the formation of the pond. It is hoped that the carrying out of the regulations will pervent such outbreaks, or at least mitigate their seriousness. The regulations are as follows:

"In order to prevent an increase in the prevalence of malaria and to avoid the formation of focii of endemic malaria by the impounding of waters, and to safeguard the public health, under and by virtue of authority vested by the Legislature of South Carolina in Section 2313, Vol. III, Code of 1922, the Executive Committee of the State Board of Health at a meeting held on October 2, 1924 by resolutions duly passed, adopted the following rules and regulations and does hereby promulgate and publish the following rules and regulations governing the impounding of waters or damming of water courses in the State of South Carolina.

Section 1. Any person, firm, corporation, or municipality desiring to impound water for any purpose whatever, other than for watering stock, shall, prior to the initiation of any construction activities, make application to the State Board of Health for, and obtain from it, a preliminary permit for the impounding of such water.

Section 2. Such application for a preliminary permit shall be made in writing in the name of the person, firm, corporation, or municipality making application, and shall be accompanied by a description of the proposed project, its purpose and its exact location; also by an accurate plat of the area to be affected, showing particularly the maximum and minimum water levels.

Section 3. A temporary permit for the inauguration of initial construction shall be issued by the State Board of Health when the following rules and regulations, or modifications thereof approved by the State Board of Health, have been made to apply to the said project.

3a. All laborers employed in the construction of the dam and the impounding of the water, shall be housed in properly screened houses and such steps taken by quinine administration and control of mosquito production in the vicinity of the camps as may be necessary to prevent the infection of malaria mosquitoes and the introduction of malaria into this locality.

3b. In the area to be occupied by the reservoir, its branches, bights and indentations, all brush, trees, undergrowth, logs, stumps, and similar objects which will not be completely and permanently submerged at times of low water and which, if not removed, would float on the surface of the impounded water soon after the impounding of the water, and all of the above material that is lying on the ground or remaining in original or new position, which would probably cause collections of floatage to gather, and thus constitute conditions favorable to the protection of larvae of mosquitoes capable of conveying malaria, shall be removed, burned, or otherwise disposed of in a manner satisfactory to the State Board of Health, prior to the impounding of the water.

3c. In the area to be occupied by the reservoir, its branches, bights, and indentations, all brush, trees, and undergrowth which would pierce the surface at low water level shall be cut off at least one foot below such low water level to prevent the collection and anchorage on any possible floatage, rafts, etc.

3d. The shore line of the reservoir, its branches, bights and indentations, from minimum low water level to a line 25 feet horizontally beyond maximum high water level, shall be cleared of all brush, trees, undergrowth, and the like, so as to prevent the collection of drift and floatage along the shore. When practicable the water level shall be held three feet above normal high water level from December 1st to June 1st.

3e. All pine trees within an area circumscribed by a line 50 feet inland from the maximum high water level of the reservoir, its branches, bights, and indentations, shall be ringed and deadened at the time of initial construction on the project, so as to prevent the falling into the water of pine tags, collections of which provide a favorable breeding place for Anopheline larvae.

3f. Small ponds for the propagation of Gambusia holbrooki (top minnows) in sufficient numbers to adequately stock the reservoir, its branches, bights, and indentations for effective mosquito control, shall be provided at the time of initial construction on the project, in accordance with definite written instructions from the State Board of Health.

3g. All depressions which will be filled with water from the reservoir, its branches, bights, and indentations at time of maximum water level, in which water will be retained at lower stages

of the water level, thus forming separate pools, shall be connected with the normal body of the reservoir, or any of its branches, bights, or indentations, with a ditch which will permit complete drainage and the entrance of fish.

Note: Such places are generally few in number, but are of importance in mosquito production.

Section 4. A preliminary permit for the impounding of water having been granted by the State Board of Health, and construction work on the project begun, a representative of the State Board of Health shall make inspection of the project from time to time, and as requested by the permit holder, and the State Board of Health shall approve in writing of that portion of the work as is outlined in Section 3 of the Regulations which has been satisfactorily completed.

As the said representative of the State Board of Health determines that the preliminary permit holder is complying with the provisions of Section 3b of these Regulations, and as it shall appear that the preliminary permit holder has complied with the provisions of Section 3c of these Regulations, the permit holder may thereupon proceed gradually, as authorized by written approval from the State Board of Health, with the impounding of water to a level specified by said representatives of the Board of Health, and, when it shall appear that the permit holder has complied with the provisions of Sections 3d and 3e, and 3f and 3g of these Regulations to the satisfaction of the Board, said Board of Health shall certify such fact to the permit holder in writing, and the permit holder may thereupon proceed with the impounding of water to maximum high water level.

Section 5. The State Board of Health shall thereupon issue a final permit for the maintenance of an impounding project by said applicant, the validity of said permit being contingent upon the observance of the following regulations:

5a. During the mosquito breeding season the permit holder shall regularly and at intervals sufficiently frequent to prevent the production of mosquitoes, remove all floatage and floating debris in the reservoir, its branches, bights, and indentations, which are likely to harbor mosquito larvae.

5b. Prompt and proper measures shall be taken to prevent the growth of cat-tails, bulrushes, and other aquatic or semi-

aquatic vegetation which offers protection of mosquito larvae from their fish enemies.

5c. Newly created impounded waters shall not be stocked with game fish without written permission from the State Board of Health.

5d. After the water has been impounded the State Board of Health shall make such inspection of the impounded waters and adjacent areas as are deemed essential; and any conditions found on the impounded water project that are, or may be detrimental to public health, or are likely to cause an increase of malaria.

5e. These Regulations shall govern any change in water level as soon as any proposed changes affecting the maximum elevation are contemplated, the State Board of Health shall be notified in writing.

5f. No waters impounded in the future shall be used as a source of domestic water supply unless upon written approval from the State Board of Health, and under conditions stipulated in such permit.

Section 6. Failure to comply with the provisions of any section or sub-section of these Regulations shall, after notice thereof, constitute a violation thereof, and shall constitute according to Section 2314, Vol. III, Code of 1922, a misdemeanor, punishable as provided in that section."

A study of the prevalence of malaria in the vicinity of a proposed impounded water project is now being made in order that reliable information may be had with reference to the effect that it will have upon the malaria prevalence in the vicinity of the reservoir. The survey comprises approximately two hundred families in a section of the State where malaria exists, but is not of serious importance in ordinary years.

As in previous years, the post card questionnaire has been sent to all the physicians in the State, requesting them to report the number of cases they have had in their practice during the past twelve months. The results of the census compiled late in 1923 are included in the table below.

Malaria Cases Reported by Physicians 1923.

County	Cases	Cards to Doctors	Replies Received
Abbeville	174	17	8
Aiken	195	30	7
Allendale	265	11	4
Anderson	59	46	24
Bamberg	275	12	3
Barnwell	48	12	3
Beaufort	101	11	3
Berkeley	250	4	1
Calhoun	400	11	2
Charleston	2,182	77	36
Cherokee	139	15	10
Chester	138	24	3
Chesterfield	23	12	3
Clarendon	134	16	7
Colleton	1,030	18	6
Darlington	335	29	11
Dillon	205	16	6
Dorchester	232	19	2
Edgefield	106	12	6
Fairfield	497	14	9
Florence	937	38	13
Georgetown	1,825	12	6
Greenville	54	78	33
Greenwood	53	24	16
Hampton	1,382	19	7
Horry	360	12	6
Jasper	60	3	1
Kershaw	96	21	6
Lancaster	84	13	4
Laurens	79	25	14
Lee	125	20	2
Lexington	110	22	8
McCormick	61	6	2
Marion	202	14	6
Marlboro	469	16	7
Newberry	371	32	14
Oconee	2	19	15
Orangeburg	3,945	44	17
Pickens	....	22	11
Richland	177	29	15
Saluda	74	11	3
Spartanburg	118	82	39
Sumter	402	25	10
Union	94	19	9
Williamsburg	756	14	9
York	87	24	15
Total	18,711	1,050	452

Advisory supervision was exercised over the towns in which malaria control work was prosecuted in previous years. At a number of these towns, health and drainage districts have been incorporated, which make the town board of health the board of health for the district in which mosquito control work has been done in the country surrounding the town, and gives them authority to levy a tax upon the property for maintenance

work; this maintenance work is carried on under the supervision of the State Board of Health. This arrangement places the upkeep of the drainage system on a permanent basis by providing a definite income for use in maintaining the work without depending upon the caprice of changing town councils.

Besides continuing the maintenance work above referred to, new work was carried out during the year at the town of Branchville, and some additional new work was done at Harleyville. The work at Branchville has been temporarily interrupted in order to carry on negotiations with the Railroad Company, looking to a participation in the cost by the Company.

Surveys have been made at other towns but no work has been definitely undertaken at any of them during the year. This is due in part to the crop failures which have occurred in the lower sections of the State for three successive years. Partial control measures have been carried out at towns and counties where special emphasis has been laid on malaria control work, particularly at Hardeeville, Bluffton, and Beaufort in Beaufort County, and at Pee Dee and Sellars in Marion County, and in the vicinity of Georgetown and Andrews in Georgetown County. These measures have been carried out by individual property owners on whose premises mosquito breeding conditions were discovered or by small allotments made from current funds of the municipalities involved.

A noticeable improvement of the drainage of roadside borrow pits was brought about in Georgetown County on the State Highway from Andrews to Georgetown. The largest problem in the draining of borrow pits occurs on county roads. In some counties not sufficient attention is paid by the road building authorities to the proper drainage of roadside borrow pits.

In Orangeburg County it is contemplated to combine road-building and drainage operations by employing a ditching machine which will excavate a continuous borrow pit along the roadside. This excavation will also serve the purpose of a drainage ditch, conveying the water to the nearest streams which the road crosses. This scheme is particularly well adapted in the coastal plain section, where the country is very flat and where it is practical to construct roads in a straight line for long distances.

Reports were received of malaria prevalence among children at Lancaster, South Carolina, and an investigation was made in November. The country around Lancaster is typical of the Piedmont. The soil formation is characteristically red clay which is deeply eroded by the streams. The streams are flashy. Some seepage areas occur in the stream valleys where Crucians or Quadrimaculats might possibly be produced, but a search of the daylight roosting places disclosed only Punctipennis. The general sanitary conditions are not what they should be and the citizens manifest a keen desire to improve them. Some of the civic organizations, particularly the Kiwanis Club, are interested in organizing a county health unit.

Complaints were received from citizens at Liberty Hill with reference to the proposed raising of the Wateree Dam near Lugoff, about six feet. The citizens feared a repetition of conditions that prevailed several years ago when the dam was constructed. A survey was made and directions issued to the Power Company, instructing them in the measures that will be required to be carried out before permission will be granted to flood additional country.

Advice has been furnished to individuals and corporations with reference to malaria problems on farms, plantation and lumber camps.

At the request of a property owner in Newberry County, an investigation was made of the conditions along the river, responsible for malaria prevalence, and at the same time sections of the county reported to be malarious were investigated. The county inspector showed keen interest in malaria control methods, and spent his vacation at Leesburg, Georgia, at the training station maintained by the International Health Board, under the supervision of Dr. Darling. Dr. Hamilton had previously spent several weeks with Dr. Darling and was much benefitted by the studies made there.

OBSERVATIONS

Observations have been made with reference to the effectiveness of screens in preventing malaria. In one community in Marion County, where careful screening of houses was brought about during the year, a slight improvement in the malaria rate appears to have been affected, but the reduction in malaria

cases was not as pronounced as could have been desired. This seems to be the experience in other places where screening is undertaken, however, in many places, dependence will have to be placed upon screening for a long time to come if the malaria conditions are going to be improved at all, due to the fact that major mosquito control measures are at present prohibited by their excessive cost.

Some studies were conducted to determine, if possible, the part that Anopheles crucians play in conveying malaria. A large pond, covering some fifteen acres, in Lexington County, was observed during the season. At no time were Quadrimaculatus observed, either from larvae hatched out or among adults caught in buildings and culverts near the pond.

A house-to-house census was made twice during the year; at the beginning and at the close of the active mosquito season, of some fifteen houses, all within a half mile of the pond. In only one house was a history of malaria obtained and considerable doubt attached to it. In three of the houses only, were crucians observed, but in a stable near the pond hundreds were caught during the season. At each visit from twenty to a hundred or more mosquitoes could be taken in this stable. They were also numerous in a road culvert near the pond; many were engorged. The reason why Quadrimaculatus were not observed to breed in this pond remains unknown.

Preliminary surveys were made to ascertain some information with reference to the flight range of crucians near the sea coast. Sol Legare Island in Charleston County, was selected because a small amount of control work on the island itself would prevent Anopheles production. Due to the lateness of the season when this work was undertaken, and to the unfavorable weather conditions that prevailed, these observations were not completed. The county health officer is planning to make some staining experiments next year in this locality.

The personnel during the year has consisted besides the winter of the following:

Dr. R. G. Hamilton, Malaria Epidemiologist.
Mr. William Weston, Malaria Field Agent.

Mr. P. G. Hasell, Malaria Field Agent.
Miss Mary Dorn, Office Secretary.

Respectfully submitted,

L. M. FISHER,
Associate Sanitary Engineer, U. S. Public Health Service. In Charge Malaria Control Work in S. C.

REPORT OF THE BUREAU OF CHILD HYGIENE FOR THE YEAR ENDING NOVEMBER 30, 1924

ADA TAYLOR GRAHAM, Director

The activities of the Bureau of Child Hygiene have been increased this year in both scope and volume. At the beginning of the year there were 33 nursing services with 54 nurses working under the direction of this Bureau. The close of the year finds us with 45 nursing services and 61 nurses, working cooperatively.

The Bureau of Child Hygiene supplied these nursing services with record forms of all sorts and literature for distribution. Posters and other exhibit materials are also loaned when requested, and the State Supervisors and staff nurses assist the local nurses with any piece of work on which they need help.

In addition to this special service, the two district supervisors make regular visits to the nurses in the counties and communities. This contract is very valuable as it keeps the Department in close touch with all the work in the field and promotes an unusually good *esprit de corps*, which enables us to keep our nurses fairly permanently.

During the year we have had only eight resignations among the nurses, and of these one returned to her former position after three months absence; three others went to other counties in the State, and one married in the State and can be an influence for health in her community, so our net loss is only three. We have placed nine new nurses and established a number of affiliations with industrial services. The end of the year finds us with only one vacancy which will be filled on the first of January.

There have been four Maternity-Infancy field nurses at work during the entire year(three white and one colored) who have instructed midwives in fourteen (14) counties. There have been 189 groups with a total attendance of 2426. Of this number 1002 attended the entire course of lectures and received certificates. In counties where there is a health service arrangements are made by the county nurse to keep regularly in touch with these midwives by requiring them to report to her once each month or every two months. For counties where there is no health service, one of the field nurses has acted as supervisor making visits to each group twice in the year.

Classes for mothers, both white and colored, were also held by these nurses and in some of the counties Little Mothers' Leagues were established. They assisted in other local health projects such as Tuberculosis and Tonsil and Adenoid clinics.

The Child Health Truck began its work on the 24th of March and visited 23 counties, remaining two or three weeks in some of the larger ones. 389 conferences were held and 6832 infants and children under school age were examined. The same method was used this year that was in force last year; securing local physicians for the conferences during the early part of the week with a final conference on Friday with a pediatrician in charge.

The death of Dr. Cornell in February was of inestimable loss to the work for he had gained the confidence of the mothers all over the State. We have, however, been fortunate in having the assistance this year of a number of interested physicians. The pediatricians employed to hold the special conferences were Drs. Andrews and Dotterer of Columbia, Dr. Pollitzer of Greenville and Dr. Watson of Anderson.

The Bureau of Child Hygiene has continued to employ a clerk in the department of Vital Statistics to send out letters to mothers offering them educational literature and advice in regard to the care of their babies. Many requests for help have come in and some very touching letters. Recently we were asked to furnish a baby with a name and Christened her with our favorite—Nancy.

During the year Tonsil and Adenoid clinics have been held in thirteen communities, and assistance was given by this Department, from one to three nurses being loaned each time. Four hundred and sixty (460) children have been operated upon.

Nine different surgeons have done the work and it has been very difficult to secure any sort of uniformity in the arrangements. Some surgeons provide their own anesthetic and surgical nurses and supplies, while others expect everything to be furnished by the community. Local people are responsible for the choice of the surgeon. While these clinics have been very popular and there have been no fatalities, there are elements of danger in them, which makes it seem unwise for the State Board of Health to assume the responsibility of fostering them.

In the future it would seem better to furnish what help we can with the clear understanding that the operator and local organization assume the entire responsibility.

On July 1 the American Red Cross, which had been paying part of the salaries of both supervising nurses for several years, withdrew their financial support and the deficit had to be supplied by Federal funds for the remainder of the year.

A re-organization of the Charleston City health work resulted in the taking over of the staff of the Charleston Public Health Association by the city. This included the Maternity-Infancy nurse who was being paid previously by the Maternity-Infancy fund. Another nurse has since been added to the staff.

In addition to visits made to county and community nurses the supervisors visit the Metropolitan Life Insurance nurses and the nurses in Industrial positions who affiliate with the Department.

EDUCATIONAL ACTIVITIES

Training of Nurses. Due to a shortage of public health nurses and the difficulty of keeping for any long period those who come from other parts of the country, a training course was instituted last year to attract local nurses to this ever widening field.

During this year seven nurses have been trained and four placed in county positions, where they are all doing very splendid work. The remaining three, who are just completing the course, will be placed at the beginning of the year.

Fair Exhibits. An exhibit was put on at the State Fair. A tent was used as a fortune telling booth where a public health nurse dressed as a gypsy told health fortunes to children, who had previously been weighed and measured by a nurse in uniform. Very attractive literature, supplied by the Metropolitan Life

Insurance Company, was distributed and all mothers who asked for pamphlets on child care were supplied with them.

Exhibit material was supplied for eight county fairs and a pediatrician sent to Marlboro County to examine children at a baby conference which was held in connection with the fair there.

May Day. At the request of the American Child Health Association, the Director acted as State Chairman for the promotion of May 1st as National Child Health Day. Programs were arranged for a number of towns throughout the State. Unfortunately the tornado prevented the carrying out of these programs as planned, but an exhibit was put on in connection with the festivities in Valley Park, Columbia.

Motion Pictures. Films teaching prenatal, infant and child care continue to be shown by the operator employed by the Bureau of Rural Sanitation. Two films which were worn out by frequent showing were replaced this year by the Bureau of Child Hygiene. These films were "Well Born" and "The Kid Comes Through."

Talks at Public Meetings, Club Meetings, etc. There have been frequent calls on members of the staff to speak at club meetings and public meetings. Thirty-seven talks have been made to a total attendance of 2722.

The following is the work reported by field, county and community nurses.

SUMMARY OF WORK CARRIED ON BY PUBLIC HEALTH NURSES FOR YEAR ENDING NOVEMBER 30, 1924.

CLASSIFICATION OF VISITS:		
Prenatal	3,910	
Postnatal	7,103	
Infants and Pre-School children	8,355	
Tuberculosis	2,814	
Other communicable diseases	1,965	
Other nursing visits	8,334	
Total number nursing visits	32,481	
Follow-up Home visits:		
To infants under 2 yrs.	1,318	
To children 2 to 7 yrs.	330	
To school children	4,687	
Total number follow-up home visits	6,336	
Instructive visits	22,963	
Social service visits	4,510	
Conference visits	6,939	
Not otherwise classified visits	4,855	
Total number all visits		78,584
SPECIMENS:		
Urine	860	
Feces	591	
Sputum	122	
Cultures taken	300	

SCHOOL INSPECTION:

Schools inspected	548
Pupils inspected	36,595
Number pupils found defective	19,401
Total number of defects	33,730

TUBERCULOSIS:

Clinics	143
Cases examined	1,808
Cases found positive	297
Cases sent to sanatorium	91

MATERNITY-INFANCY-PRE-SCHOOL WORK:

Prenatal conferences	42
Total attendance	1,392
Prenatal clinics	197
Total number examined	361
Child health centers established	8
Child health conferences	389
Total number examined	6,832

EDUCATIONAL ACTIVITIES:

Talks to school children	1,802
Attendance	51,010
Talks at public meetings	274
Attendance	14,031
Talks at club meetings	245
Attendance	6,445
Home Nursing class groups	85
Total number class meetings	495
Total number enrolled	1,769
Certificates given	319
Midwifery class groups	189
Total number enrolled	2,426
Certificates given	1,002
Little Mothers' League groups	12
Total number enrolled	343
Nutrition class groups	12
Health Crusade groups	77
Total number enrolled	5,512
Exhibits at fairs, etc.	19
Attendance	37,581
Number pieces literature distributed	53,380
Lectures, talks, etc. by others	66
Attendance	5,268
Moving pictures shown	456
Attendance	53,165

CORRECTIONS AND TREATMENTS:

Orthopedic cases treated	65
Dental clinics	34
Number children treated	4,773
Children fitted with glasses	113
Adenoid and tonsil clinics	35
Number children operated on	689
Vaccinations for smallpox	26,171
Anti-typhoid inoculations	58,116
Toxin-antitoxin doses given	2,456
Other treatments	4,720

CLASSIFICATION OF PATIENTS:

Prenatal	914
Postnatal (mothers)	564
Postnatal (new born infants)	383
Infants 1 month to 2 years	1,252
Children 2 to 7 years	704
Tuberculosis	646
Other communicable diseases	1,169
Surgical	651
Not otherwise classified	1,003
Total number patients enrolled	7,286

ANNUAL REPORT OF THE DEPARTMENT OF RURAL SANITATION AND COUNTY HEALTH WORK STATE BOARD OF HEALTH

L. A. Riser, M. D., In Charge.

To the Chairman and Members of the Executive Committee, South Carolina State Board of Health.

Gentlemen: I herewith submit a narrative and statistical report of work done by the Department of Rural Sanitation and County Health Work during the year 1924:

All County Health Officers were instructed the first of the year to arrange their clinics so that people living in adjoining counties might avail themselves of the opportunity to receive free vaccines, etc. By doing this we have been able to reach the citizens of thirty-five counties. Many persons from counties where there are no Health Officers have come in to these clinics, received physical examinations, and their children have been given typhoid inoculations, vaccines, etc. On request of teachers in schools outside the county, near the county lines, the children in these schools received free examinations. Three counties with full time Departments received aid from the Department of Malaria Control. In order to avoid any overlapping of statistics no work done in these counties is included in this report.

Health Officers in Fairfield, Darlington, Newberry and Cherokee Counties resigned and new men were secured to take their places. It is always difficult to get the proper type of man to do successful health work. Fairfield County was without a Health Officer for part of the year and work in Colleton and Darlington Counties did not begin until the middle of the year. In Newberry and Cherokee Counties we were able to fill the vacancies at once.

Co-operation:

The Department of Malaria Control has co-operated with us in the special malarial program which has been attempted in some of the counties and the Bureau of Child Hygiene has co-operated in the infant welfare program. In the tuberculosis clinics we have had the help of the physicians at the State Tuberculosis Sanatorium and also aid from the State Tuberculosis Association.

Educational:

Under this head comes our Moving Picture Unit. We have shown our pictures in 26 counties this year to 255 audiences and 50,050 people saw these pictures. We now have about twenty films. By keeping a record of the films shown we do not show these films a second time to any audience except by request and in this way we never fail to get a good audience. Other educational measures used successfully in the past have been continued: 926 lectures; 722 talks to school children; 23,744 instructive home visits; 27,185 letters and 28,411 pieces of literature have contributed to the program for Better Health Education. Juvenile Health Boards were organized in the schools in Dillon County and these school children are creating a strong sentiment in their respective communities favorable to better sanitary conditions. Demonstrations and exhibits at County Fairs, in eight counties, were put on showing where disease existed and how to prevent it.

Constructive Work:

There have been 1,282 homes sanitated and 448 resanitated. Many small towns are taking an interest in improved sanitation and have passed laws requiring all property owners in the towns to put in sanitary arrangements which must be subject to the inspection and approval of the Health Department. The Health Officer in Anderson County instituted a system of sanitary drinking water in several schools in the county. Other country schools in this and other counties are copying this system, which is cheap and easy to install. Under this head might also be mentioned the County Tuberculosis Sanatorium in Charleston County which has been built under the supervision of the Charleston County Health Department.

Medical Examination of School Children:

The medical examination of school children is being carried out in all counties. In the counties where this work has been previously done the Health Officers are going into the examinations more thoroughly. While this takes longer and fewer children are examined, existing defects are being discovered which were never detected in the old form of medical inspection. A number of cases of heart disease and tuberculosis have been discovered in one county where the Health Officer, with

the consent of the parents, is giving a thorough physical examination of each child. There have been 18,527 children examined this year.

Typhoid Fever:

While typhoid fever has been prevalent in the State, a marked reduction is shown in counties where typhoid inoculations have been carried out on a large scale. There have been 64,981 typhoid inoculations given. The percentage of those failing to take the three inoculations is very small. Over 20,000 inoculations were given in Colleton County. This campaign has broken all previous records. The value of typhoid vaccine has been thoroughly demonstrated. In Newberry and Fairfield Counties where typhoid clinics have been held for the past four years a larger number than ever came for preventive treatment. Many of these took this treatment three years ago.

Smallpox:

This disease is under good control, due to previous vaccinations. Occasionally a case is reported and new cases develop. Small outbreaks have occurred in every county but these have been promptly checked by compulsory vaccination. During the year 22,128 persons were vaccinated.

Tuberculosis:

Clinics have been held for free examinations at which 412 suspected cases were examined and 55 found positive. These positive cases were placed in institutions when possible. As all insituations for the care of tuberculosis are crowded with a long waiting list, homecare is given to those who have to stay at home. Instruction as to care and prevention is given to prevent the spread of the disease. In Charleston County a Tuberculosis Sanatorium has been opened. The Health Officer in that county has devoted a great deal of time to the planning and construction of this institution, which he has been able to build very economically. Aiken County has secured an ordinance passed by the city of Aiken which prohibits milk from being sold in the city unless the cows have been tested and found free from tuberculosis. A small milk laboratory has been established and the Health Officer makes free tests of the milk for bacteria, sediment, fats, etc.

Hookworm:

Most of the hookworm work has been done in the lower part of the State. In some counties the infection still runs high. We keep on hand treatment for this disease which is given free to anyone unable to pay for treatment. There have been 162 cases treated for this disease.

Diphtheria:

As toxin anti-toxin is furnished in limited quantities only, we have been unable to answer requests for the serum. There have been 2,821 children who have received this preventive treatment and some of the counties are now buying this serum in order to supply the demand. We hope that means may be provided whereby we will be able to procure an unlimited supply next year.

Rabies:

On account of the increase in hydrophobia among dogs and a consequent increase of the number of people bitten, several counties have offered preventive treatment for dogs. This treatment is furnished at cost and the owner of the dog has paid for the treatment. There have been 1,641 dogs inoculated against rabies.

Malaria:

Several counties have established fish hatcheries for the free distribution of top minnows. This work is under the Department of Malaria Control and will not be included in this report.

Child Welfare:

All counties are doing child welfare work. The infant and pre-natal work is under the supervision of the Department of Child Hygiene and will be included in their report. Through this Department we have been able to secure nurses to help us in the instruction of widwives, 1,138 of whom have been instructed.

Venereal Disease:

Blood for Wasserman tests is taken and sent to the laboratory for examination. In case of indigent cases and where syphilis is found to exist a practicing physician takes care of these cases and gives them free treatment. In Orangeburg County a ve-

nereal clinic is carried on in connection with the Health Department. 6,587 persons visited the clinic, 1,429 were treated for syphilis and 2,257 for gonorrhea.

Other Contagious and Infectious Diseases:

All contagious diseases in childhood are quarantined and children excluded from school during period of incubation. Cases of scarlet fever, whooping cough, measles, scabies and ringworm of the scalp have occurred in schools. In some cases it has been necessary to close the schools in order to prevent serious epidemics.

Tonsil and Adenoid Clinics:

Clinics have been held in Darlington, Orangeburg, Anderson, Newberry and Charleston Counties and 148 children were operated on for diseased tonsils and adenoids. The fees for these operations are nominal and no charge is made where the patient is unable to pay.

Eye Clinics:

Eye clinics were held in Charleston and Newberry Counties. There were 325 children examined and fifteen defects noted and corrected.

Orthopoedic Clinics:

Orthopoedic clinics have been held in Anderson and Cherokee Counties; 75 orthopoedic cases were examined in Cherokee County. Some of these cases were operated on and others are now being treated.

Dental Clinics:

Clinics in charge of local dentists were held in Newberry County. Three hundred children were treated. These children were brought in by the Health Department. Children have been similarly treated in other counties. Other dental work is being included in the special dental report appended.

We have had a splendid corps of workers this year. Health Officers, Nurses and Inspectors are far above the average of other States, and their work has been of a high class. To each of them we give credit for the splendid year's work.

A statistical report follows.

Respectfully submitted,

L. A. RISER, M. D., In Charge.

STATISTICAL REPORT

DEPARTMENT OF RURAL SANITATION AND COUNTY HEALTH WORK

SOUTH CAROLINA STATE BOARD OF HEALTH

Dr. L. A. Riser, In Charge

ANNUAL REPORT FOR THE YEAR 1924

Constructive Work

Septic tanks installed	107
Pits installed	790
Buckets installed	43
Sewerage installed	30
Other types installed	499
Homes screened	495
Food handlers inspected	748
Re-sanitations	448

Educational Work

Lectures delivered	926
Attendance	29,892
Moving picture shows	255
Attendance	50,050
Talks to school children	782
Children present	38,597
Clubs organized	32
Members enrolled	1,809
Literature distributed	28,411
Letters written (office)	10,794
Circular letters mailed	16,391
Homes visited by Director	3,959
Homes visited by Inspector	14,086
Homes visited by Nurse	5,699
Total homes visited	23,744

Laboratory Work

Examined for hookworm	720
Infected	353
Treated	162
Other laboratory work	264

Sera and Vaccines

Vaccinations (smallpox)	22,128
Vaccinations (whooping cough)	66
Inoculations (typhoid fever)	64,981
Number persons taking 3 inoculations	19,733
Inoculations (toxin anti-toxin)	2,821
Inoculations (anti-toxin)	43
Pasteur treatments	343
Dogs inoculated	1,641

Contagious and Infectious Diseases

Contagious diseases investigated	1,460
Typhoid cases investigated	185
Tuberculosis cases investigated	342
Other diseases investigated	169

Medical Examinations

Schools visited	813
Schools examined	674
Pupils examined	18,527
Pupils defective	9,400
Defects	30,640
Defects corrected	5,754

FREE CLINICS

Tuberculosis Clinics

Number examined	412
Cases found positive	55

Tonsil and Adenoid Clinics

Operated on for diseased tonsils	148
Operated on for diseased adenoids	147

Dental Clinics

Children examined	3,112
Children's teeth cleaned	1,896
Children's teeth extracted	540
Children's teeth filled	1,759

Child Welfare Clinics

Number mothers instructed	776
Number children examined	1,022

Eye Clinics

Children examined	324
Defects	15
Corrections	15

Midwife Classes

Number classes organized	82
Number instructed	1,138

ANNUAL REPORT OF THE STATE DENTAL CLINICS

E. A. Early, D. D. S., Director

To the Director, Department Rural Sanitation and County Health Work, South Carolina State Board of Health.

Sir: I herewith submit a narrative and statistical report of the work done by the State Dental Clinics for the year 1924:

The plan of the State Dental Clinics is to get an appropriation of $1,000.00 in each county that desires to have these clinics. This money so far has been appropriated by the County Delegation, this being quite a step forward in this work, as last year we had to approach many different agencies in the county, such as Mother's Clubs, Associated Charities, Parent-Teacher's Associations, and Improvement Associations, together with donations by interested parties. A treasurer is appointed by the ones appropriating the money (persons connected with The State Dental Clinic not eligible) to take charge of the Dental Fund. This treasurer must sign the contract together with the Secretary of the State Board of Health, a copy of which is filed in the office of the treasurer and a copy filed in the office of the Secretary of the State Board of Health.

During the first part of the year 1924, up to the close of the school terms, we conducted dental clinics in the following counties: Darlington, Florence, Marion, Dillon, Williamsburg, Charleston, Orangeburg, Barnwell, Aiken, Marion and Cherokee. In the schools of Cheraw, Chesterfield County; McColl, Marl-

boro County; Charleston, Charleston County; Manning, Clarendon County; Eastover, Richland County; and Boykin school, Kershaw County, we have conducted individual clinics. Beginning with the fall term of the schools we have begun clinics in the following counties: Darlington, Florence, Sumter, Lee, Barnwell, Aiken, Colleton, Orangeburg, Laurens, Spartanburg, and in the City Schools of Charleston. The work which has been done in these schools will be found in the statistical report which is attached. In this report will be found that 35,018 children have been examined; of this number 17% were not eligible for treatment in the dental clinics, as the pupil was either above the sixth grade or over 14 years of age.

Along with the educational program of the clinics we have been able to obtain toothbrushes of the highest grade, which we sell at a minimum price, ten cents, and each child is urged to have his own toothbrush. Along with each toothbrush sold is given a sample tube of dental cream. Lectures are given in every school, and also to the different organizations interested in the welfare of the children of our State, and toothbrush drills are given in each school, also, by the Clinicians, it being one of the duties of the Clinicians to teach Mouth Hygiene in the schools of the county in which he is located.

After the close of the schools in the spring, the Director visited the various counties in the State, arranging for Dental Clinics in the schools opening in the fall. The Director visited thirty counties, making a total of 150 lectures to public gatherings explaining the aims of the State Dental Clinics, and of this number we have established clinics in twelve counties with four others who have appropriated the money, but we have been unable to secure Clinicians for these four up to date. We are endeavoring to supply these counties at an early date. In the interest of this work the Director has travelled 22,735 miles over the State by automobile, with 1,500 miles by rail. During the year the Director has attended the meetings of The State Dental Society, Charleston, S. C., The Pee Dee Dental Society, Florence, S. C., The Fifth District Dental Society, Laurens, S. C., and The American Dental Association, at Dallas, Texas. At all of these meetings the Director gave a talk on the Methods of Conducting Dental Clinics in South Carolina. The Director also attended the meeting of The South Carolina State Public Health

Association. All State Dental and Medical Societies have heartily endorsed the work of the State Dental Clinics.

At the State Fair, held in Columbia, S. C., the State Dental Clinics had a booth in which was demonstrated the actual work carried on in the various public schools. This was made possible by the aid of the Nurse in the Pacific Mills Community, who furnished fifteen patients each day of the Fair. This work was done free by two State Clinicians. This made such an impression that a Committee from Spartanburg and Lee Counties paid the expense of the free clinics so that this demonstration could be made in an exhibit at their County Fairs held in the Cities of Spartanburg and Bishopville.

STATISTICAL REPORT FOR THE DEPARTMENT OF DENTAL CLINICS FOR THE YEAR 1924

Number of pupils examined	35,018
Number of pupils treated	7,684
Number of amalgam fillings	13,492
Number of cement fillings	2,301
Number of cleanings	5,235
Number of extractions	3,799
Number of pay pupils treated	6,414
Amount collected	$10,715.50
Number of free pupils treated	169
Value of free work	$527.50
Total earned	$11,243.00
*Number of toothbrush drills	34
*Number of lectures	126
*Number present	5,362

*These records are from September 15, 1924 to November 30, 1924. There were no records kept of the drills, lectures, etc., for the first months in the year 1924.

Respectfully submitted,

E. A. EARLY, D. D. S.,
Director Dental Clinics.

ANNUAL REPORT OF HYGIENIC LABORATORY

The Chairman and Members of the Executive Committee, South Carolina State Board of Health.

Gentlemen: I have the honor to submit the following report of the work of the Hygienic Laboratory for the year 1924.

1. *Quarters.* Since October, 1910 the Laboratory has been located in comfortable and fairly adequate quarters on the first floor of the New Science Building (LeConte College) of the University of South Carolina. On the completion of the proposed new State Office building the Laboratory will occupy space there along with the other departments of the State Board of Health. In connection with the space allotted to the State Board of Health in this building it is respectfully urged that not only the immediate needs of the Laboratory be considered in allocating such space, but that provision be made for necessary future normal expansion. The plans, as tentatively made out for the Laboratory, do not allow proper space for its present needs.

2. *Personnel.* The personnel of the Laboratory is as follows: H. M. Smith, A. M., M. D., Director; James R. Cain, M. A., B. S., Bacteriologist; Eugenia McDonald, Technician; and Margaret C. Davis, Stenographer. The Director has been a member of the Laboratory Staff since 1917, the Bacteriologist since 1911, the Technician since 1922, and the Stenographer since 1917. I wish to commend the efficiency and zeal of each assistant.

3. *Diagnostic Tests.* Thirty thousand, five hundred and seven tests were made at the Laboratory during the year, an increase of 17% over the work of the previous year. Sixteen thousand and fifty of these tests were Wassermann tests, 2291 of which, or 14%, were positive for syphilis. Five hundred and seventy-seven animal brains were examined for rabies, an increase of 200, or 53%, over last year's number. Three hundred and eighteen of these brains, or 55%, were found positive for rabies, this being a 70% increase over the positive findings for last year. Four thousand, five hundred and twenty-three Widal tests were made, 1713 of these, or 38%, being positive for typhoid or paratyphoid fever. Four hundred and forty-one nose and throat cultures were examined for the presence of diphtheria bacilli, 69 of these, or 16%, giving positive results. Diphtheria culture tubes are prepared at the Laboratory and sent out to physicians throughout the State for the submission of such specimens.

4. *Anti-rabic Treatments.* The number of patients given anti-rabic treatments this year is more than double last year's number, much greater than any number in any previous year. One thousand and sixty-three patients have taken the treatment during the year 1924, as compared with 516 patients for the year 1923, the number this year requiring the preparation of 22,323 doses of anti-rabic vaccine. Every county in the State was represented in this number, Greenville County leading with 126 patients, followed by Spartanburg County with 121, and Charleston County with 104, and so on down the line with McCormick County offering only one patient. There has been a great increase in rabies among animals in many States throughout the whole United States, and South Carolina appears to be well out in the fore-front among the leaders of the procession. Numerous deaths from rabies throughout the country have been reported both in children and adults. There were three deaths from rabies this year in South Carolina. Two patients, both colored, ages 45 and 12, were bitten severely on the face and developed rabies before the treatment could be finished. The third patient, white, age 16, did not take anti-rabic treatment. South Carolina's rabies record each year demonstrates the increasing importance of the State's rabies problem and adds further proof of the necessity of eradicating rabies at its source by the preventive inoculation of all dogs in the State with anti-rabic vaccine. The rabies problem, as handled up to the present, has been attacked in a make-shift manner, from one end only and in great part the wrong end at that. Anti-rabic treatment of persons after they have been bitten has been going on for years with much time and effort expended on locking the stable after the horse has been stolen,—fairly good, of course, as far as it goes,—while attempts to obtain State-wide legislation requiring vaccination of dogs for the *eradication* of rabies have so far met with no success. Various cities and towns throughout the State have enacted ordinances for such compulsory vaccination, which helps to that extent, but until such action becomes a State-wide measure the results will not be very effectual.

5. *Papers Published.* During the year four articles prepared by the Director of the Laboratory were published in the journals and papers named below as follows: "The Spinal Fluid and Syphilis," S. C. Medical Journal, March, 1924, presented before

the South Carolina Medical Association; "Some Preventive Medical Measures," The State, July 27, 1924, read before the Second District Medical Association of South Carolina; "Observations on the Wassermann Test," Southern Medical Journal, September, 1924, read before the Southern Medical Association; "Rabies Prophylaxis in South Carolina," read before the Southern Public Health Laboratory Association and published in its Volume of Proceedings, 1924.

6. *Southern Public Health Laboratory Association.* This Laboratory has been a member of the Southern Public Health Laboratory Association since its organization in 1921. These conferences of the Directors and members of public health laboratories and of others interested in such work are of great value, and this association is doing much toward the proper development of scientific Public Health Laboratory work in the South. The present Director of the South Carolina State Hygienic Laboratory has been unable to attend any of these meetings on account of insufficient appropriation for traveling expenses.

7. *Typhoid Bacterin.* Along with the increased percentage of typhoid fever in the State this year, there has been an increased demand for typhoid bacterin. One hundred and eighty-four thousand, four hundred and thirteen 1 mil ampoules have been sent out during the year, nearly double the amount distributed last year.

8. *Funds.* The 1924 appropriation for the Laboratory was $11,750, amounting to 5% of the total appropriation for the State Board of Health and equivalent to a tax of 1/37 of a mill on the assessed valuation of the taxable property of the State.

Estimating the cost of the 1063 series of anti-rabic treatments at $5 each, the charge made by various State Board of Health Laboratories for furnishing such treatments, the cost of each of the 30,507 diagnostic tests made at this Laboratory is 21 cents per test, less than one-half the cost of such tests as reported by other State Board of Health Laboratories.

A summarized statement of the work of the Laboratory is attached.

Respectfully,

H. M. SMITH, M. D.,
Director, Hygienic Laboratory.

SUMMARY OF LABORATORY WORK FOR THE YEAR 1924.

	Positive	Negative	Doubtful	Total
1. Blood:				
(1) Widal Tests:				
(a) B. typhosus	1 555	2 795	173	4 523
(b) B. paratyphosus	158	4 338	27	4 523
(2) Plasmodia	12	651	.....	663
(3) Cultures	.....	1	.....	1
(4) Miscellaneous	.....	3	.....	3
2. Brain:				
(1) Negri bodies	318	259	.....	577
3. Chancre:				
(1) Spirochaeta pallida	2	2	.....	4
4. Milk:				
(1) Culture, B. coli	6	6	.....	12
(2) Analyses	.....	.....	.....	2
(3) Miscellaneous	3	4	.....	7
5. Nose and Throat:				
(1) Cultures, B. diphtheriae	69	372	.....	441
(2) Spirochaeta vincenti	1	6	.....	7
(3) Miscellaneous	.....	6	.....	6
6. Pus and Excreta:				
(1) Gonococcus	78	234	.....	312
(2) B. tuberculosis	.....	7	.....	7
(3) Koch-Weeks bacillus	.....	1	.....	1
(4) Staphylococcus	1	.....	.....	1
(5) Miscellaneous	2	.....	.....	2
7. Spinal Fluid:				
(1) Meningococcus	.....	5	1	6
(2) B. tuberculosis	.....	4	.....	4
(3) Miscellaneous	2	1	.....	3
8. Sputum:				
(1) B. tuberculosis	170	779	.....	949
(2) Miscellaneous	2	3	.....	5
9. Stools:				
(1) Parasites:				
(a) Ascaris lumbricoides	61	.....	.....	61
(b) Endamoeba coli	.....	2	.....	2
(c) Endamoeba histolytica	1	7	.....	8
(d) Oxyuris vermicularis	2	.....	.....	2
(e) Taenia nana	15	.....	.....	15
(f) Trichuris trichiura	1	.....	.....	1
(g) Uncinaria	642	878	.....	1 520
(h) Miscellaneous	2	6	.....	9
(2) Cultures:				
(a) B. typhosus	.....	14	.....	14
(b) B. paratyphosus	.....	12	.....	12
10. Urine:				
(1) Cultures:				
(a) B. typhosus	.....	12	.....	12
(b) B. paratyphosus	.....	11	.....	11
(2) Analyses	.....	.....	.....	116
(3) Miscellaneous	25	25	.....	50
11. Water:				
(1) Culture, B. coli	76	389	.....	465
(2) Culture, B. aerogenes only	94	.....	.....	94
(3) Miscellaneous	1	.....	.....	1
12. Miscellaneous	1	4	.....	5
Total	3 300	10 837	201	14 457

13. Wassermann Tests:	+++	++	+	++	+	±	−	AC	Total
Blood	1 895	267	101	499		258	12 589	288	15 897
Spinal Fluid	28	.....	.....	.....	.....	5	120	.....	153
Total	1 923	267	101	499		263	12 709	288	16 050
Grand Total									30 507

SUMMARY OF LABORATORY WORK FOR THE YEAR 1924.—Continued

14. Antirabic Treatments:

(1) Complete treatment to December 31st	961
(2) Under treatment December 31st	61
(3) Treatments discontinued by request of patient	41
Total	1 063
(4) Treated at home	1 027
(5) Treated at laboratory	36
	1 063

(6) Distribution of treatments according to counties:

Abbeville	8	Chesterfield	28	Hampton	15	Oconee	15
Aiken	24	Clarendon	5	Horry	2	Orangeburg	25
Allendale	4	Colleton	3	Jasper	7	Pickens	21
Anderson	45	Darlington	8	Kershaw	4	Richland	40
Bamberg	16	Dillon	14	Lancaster	4	Saluda	4
Barnwell	15	Dorchester	7	Laurens	31	Spartanburg	121
Beaufort	24	Edgefield	4	Lee	4	Sumter	30
Berkeley	18	Fairfield	10	Lexington	7	Union	10
Calhoun	17	Florence	45	Marion	11	Williamsburg	11
Charleston	104	Georgetown	12	Marlboro	5	York	73
Cherokee	31	Greenville	126	McCormick	1		
Chester	34	Greenwood	14	Newberry	6		1063

15. Typhoid Bacterin:

(1) Number of 1 mil ampoules sent out 184,413

REPORT OF BUREAU OF VITAL STATISTICS

Columbia, S. C. December 1, 1924.

Dr. James A. Hayne,
Secretary State Board of Health,
Columbia, S. C.

My dear Dr. Hayne: Herewith please find my report for ten months ending October 31st.

I have no comments to make except that birth registration has improved very considerably during 1924.

With regards,
Very truly yours,

C. W. MILLER,
Director.

TOTAL NUMBER OF BIRTHS AND DEATHS IN SOUTH CAROLINA FROM JANUARY THROUGH OCTOBER 31, 1923 AND 1924.

COUNTY	Deaths		Births	
	1923	1924	1923	1924
Abbeville	253	279	515	578
Aiken	419	517	838	825
Allendale	152	184	362	394
Anderson	691	723	1 701	1 795
Bamberg	210	208	386	420
Barnwell	107	167	337	391
Beaufort	345	357	420	484
Berkeley	270	316	510	581
Calhoun	192	253	257	424
Charleston	1 635	1 720	2 105	2 137
Cherokee	278	292	668	753
Chester	313	283	610	665
Chesterfield	232	305	713	777
Clarendon	265	330	605	781
Colleton	199	222	432	454
Darlington	424	463	868	903
Dillon	202	249	536	677
Dorchester	169	212	310	408
Edgefield	198	190	317	356
Fairfield	213	263	521	679
Florence	617	766	1 155	1 267
Georgetown	276	322	418	556
Greenville	983	972	2 160	2 324
Greenwood	333	383	635	579
Hampton	194	209	345	309
Horry	271	353	887	999
Jasper	90	140	203	227
Kershaw	309	277	572	679
Lancaster	260	223	587	619
Laurens	340	412	745	868
Lee	201	329	509	625
Lexington	250	313	732	717
McCormick	115	94	213	249
Marion	185	257	457	553
Marlboro	462	383	787	844
Newberry	324	342	713	740
Oconee	239	267	671	728
Orangeburg	656	783	1 437	1 624
Pickens	235	216	830	882
Richland	1 185	1 309	1 590	1 668
Saluda	136	152	306	354
Spartanburg	833	983	1 957	2 074
Sumter	558	672	919	1 207
Union	232	264	577	639
Williamsburg	283	433	723	924
York	487	515	974	1 112
Totals	16 821	18 902	34 208	37 829

1923	1924	
Death Rate per M. 11.6	Death Rate 12.9	Increase 1.3
Birth Rate per M. 23.5	Birth Rate 25.8	Increase 2.3

Infant Mortality, 1923 ..... 102.8
Infant Mortality, 1924 ..... 105.7 Increase 2.9

INFANT MORTALITY IN THE FOLLOWING COUNTIES IN SOUTH CAROLINA FROM JANUARY THRU OCTOBER 31, 1924.

Counties	Number
Abbeville	53
Aiken	101
Allendale	38
Anderson	159
Bamberg	31
Barnwell	26
Beaufort	56
Berkeley	80
Calhoun	71
Charleston	317
Cherokee	67
Chester	48
Chesterfield	86
Clarendon	100
Colleton	33
Darlington	140
Dillon	62
Dorchester	41
Edgefield	41
Fairfield	56
Florence	181
Georgetown	64
Greenville	201
Greenwood	63
Hampton	50
Horry	97
Jasper	26
Kershaw	62
Lancaster	56
Laurens	79
Lee	108
Lexington	75
McCormick	17
Marion	52
Marlboro	87
Newberry	60
Oconee	46
Orangeburg	195
Pickens	55
Richland	150
Saluda	26
Spartanburg	240
Sumter	163
Union	36
Williamsburg	118
York	97
Total	4 014

WHITE AND NEGRO BIRTHS AND DEATHS FOR 1924 BASED ON TEN MONTHS REPORT.

White Births	19,003	Rate per M.	25.8
Negro Births	18,784	Rate per M.	25.6
		Difference	.2
White Deaths	7,507	Rate per M.	10.2
Negro Deaths	11,395	Rate per M.	15.5
		Difference	5.3

DEATHS FROM MALARIA IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1923 AND 1924.

	1923 Attended by Doctors	1923 Unattended by Doctors	1924 Attended by Doctors	1924 Unattended by Doctors
Abbeville	.....	.....	1	.....
Aiken	4	.....	4	.....
Allendale	.....	1	1	.....
Anderson	1	.....	.....	.....
Bamberg	2	2	2	.....
Barnwell	1	.....	2	.....
Beaufort	.....	33	1	24
Berkeley	3	40	2	31
Calhoun	2	3	5	1
Charleston	7	31	11	35
Cherokee	.....	.....	2	.....
Chester	1	.....	1	.....
Chesterfield	3	.....	.....	.....
Clarendon	.....	4	4	1
Colleton	5	14	6	15
Darlington	3	.....	1	.....
Dillon	.....	.....	1	.....
Dorchester	2	.....	2	2
Edgefield	1	1	1	.....
Fairfield	1	.....	.....	.....
Florence	4	1	5	.....
Georgetown	6	12	4	10
Greenville	.....	.....	.....	.....
Greenwood	1	.....	.....	.....
Hampton	1	3	4	3
Horry	.....	1	1	1
Jasper	2	5	2	4
Kershaw	1	.....	3	2
Lancaster	2	.....	.....	.....
Laurens	.....	1	1	.....
Lee	1	.....	1	.....
Lexington	2	.....	1	.....
McCormick	1	.....	1	.....
Marion	.....	1	1	.....
Marlboro	3	.....	6	1
Newberry	1	.....	1	.....
Oconee	.....	.....	.....	1
Orangeburg	7	8	9	6
Pickens	.....	.....	.....	.....
Richland	4	1	8	.....
Saluda	2	.....	.....	.....
Spartanburg	.....	.....	.....	.....
Sumter	1	2	3	2
Union	1	.....	2	1
Williamsburg	4	4	3	4
York	5	.....	2	.....
Totals	85	168	105	144

DEATHS FROM PELLAGRA IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1923 AND 1924.

	1923 Attended by Doctors	1923 Unattended by Doctors	1924 Attended by Doctors	1924 Unattended by Doctors
Abbeville	3	1	4	.....
Aiken	4	1	4	2
Allendale	3	.....	2	.....
Anderson	7	.....	12	1
Bamberg	2	.....	.....	1
Barnwell	3	.....	2	1
Beaufort	.....	2	2	.....
Berkeley	.....	1	2	2
Calhoun	.....	.....	1	1
Charleston	27	4	30	1
Cherokee	3	.....	5	.....
Chester	8	.....	10	.....
Chesterfield	1	.....	1	.....
Clarendon	2	1	.....	.....
Colleton	2	.....	5	.....
Darlington	.....	.....	2	.....
Dillon	.....	.....	3	.....
Dorchester	2	1	1	1
Edgefield	3	.....	3	1
Fairfield	.....	1	6	.....
Florence	7	.....	10	.....
Georgetown	2	2	4	1
Greenville	11	.....	3	.....
Greenwood	7	1	5	1
Hampton	.....	.....	1	.....
Horry	.....	2	.....	2
Jasper	.....	.....	4	.....
Kershaw	2	1	2	.....
Lancaster	4	.....	2	1
Laurens	2	.....	12	1
Lee	3	1	1	.....
Lexington	2	2	2	.....
McCormick	1	1	.....	1
Marion	1	.....	2	.....
Marlboro	2	.....	1	.....
Newberry	3	.....	3	1
Oconee	4	.....	1	.....
Orangeburg	3	2	6	.....
Pickens	2	.....	3	.....
Richland	73	.....	69	.....
Saluda	1	.....	.....	.....
Spartanburg	17	1	12	1
Sumter	4	.....	2	.....
Union	5	.....	4	.....
Williamsburg	3	.....	1	2
York	13	.....	8	.....
Totals	242	25	253	22

DEATHS FROM TYPHOID FEVER IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1923 AND 1924.

	1923 Attended by Doctors	1923 Unattended by Doctors	1924 Attended by Doctors	1924 Unattended by Doctors
Abbeville	4	.....	4	.....
Aiken	5	.....	13	2
Allendale	3	.....	1	.....
Anderson	11	.....	9	.....
Bamberg	6	.....	11	.....
Barnwell	2	.....	5	.....
Beaufort	.....	.....	1	2
Berkeley	.....	.....	.....	2
Calhoun	3	1	6	2
Charleston	5	.....	14	.....
Cherokee	5	.....	4	.....
Chester	3	.....	12	.....
Chesterfield	2	2	6	.....
Clarendon	5	1	5	4
Colleton	3	.....	.....	.....
Darlington	5	1	9	1
Dillon	4	.....	6	.....
Dorchester	2	1	4	1
Edgefield	4	2	11	.....
Fairfield	.....	.....	4	.....
Florence	11	.....	14	1
Georgetown	1	.....	6	1
Greenville	11	.....	10	.....
Greenwood	6	.....	12	.....
Hampton	3	2	9	3
Horry	4	4	6	2
Jasper	.....	.....	.....	.....
Kershaw	10	1	9	.....
Lancaster	6	1	6	.....
Laurens	8	.....	7	.....
Lee	3	1	7	3
Lexington	7	1	3	.....
McCormick	6	1	2	1
Marion	.....	.....	4	3
Marlboro	7	.....	5	.....
Newberry	3	.....	4	.....
Oconee	8	.....	4	1
Orangeburg	10	5	18	7
Pickens	2	.....	3	.....
Richland	7	.....	18	.....
Saluda	3	.....	5	1
Spartanburg	9	.....	13	1
Sumter	15	2	15	3
Union	3	3	5	.....
Williamsburg	3	4	13	4
York	5	.....	7	.....
Totals	223	33	330	47

DEATHS FROM TUBERCULOSIS, ALL FORMS, IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1923 AND 1924.

	1923 Attended by Doctors	1923 Unattended by Doctors	1924 Attended by Doctors	1924 Unattended by Doctors
Abbeville	15	3	12	2
Aiken	35	4	43	2
Allendale	15	2	23	1
Anderson	43	5	52	2
Bamberg	10	4	10	5
Barnwell	11	4	13	2
Beaufort	7	24	8	14
Berkeley	7	16	7	11
Calhoun	13	4	12	10
Charleston	103	20	94	11
Cherokee	35	3	27	2
Chester	19	4	22	3
Chesterfield	13	2	21	2
Clarendon	7	24	6	17
Colleton	9	8	9	5
Darlington	49	4	31	5
Dillon	14	.....	15	7
Dorchester	16	2	21	8
Edgefield	13	5	8	6
Fairfield	18	8	20	6
Florence	39	3	50	4
Georgetown	21	12	18	3
Greenville	118	1	90	.....
Greenwood	18	.....	20	5
Hampton	11	6	6	9
Horry	8	12	5	13
Jasper	2	3	9	6
Kershaw	15	1	14	1
Lancaster	12	10	18	3
Laurens	27	5	22	6
Lee	8	6	21	7
Lexington	10	2	10	6
McCormick	6	5	3	3
Marion	20	2	13	3
Marlboro	25	3	20	2
Newberry	31	6	22	.....
Oconee	12	3	8	1
Orangeburg	36	9	36	16
Pickens	7	.....	14	1
Richland	142	8	120	2
Saluda	10	.....	13	3
Spartanburg	64	7	68	3
Sumter	44	9	33	8
Union	17	2	19	3
Williamsburg	21	14	24	21
York	39	3	46	.....
Totals	1 215	278	1 176	250

DEATHS FROM THE FOLLOWING DISEASES FOR TEN MONTHS ENDING OCTOBER 31, 1924.
RATES FOR THE YEAR BASED ON REPORTS FOR TEN MONTHS.

Unattended by Doctors	Number	Rate
Cancer & Malignant Tumors	42	2.88
Diseases of Circulation	465	31.68
Diabetes	.....	.....
Diphtheria	24	1.68
Dysentery	102	6.96
Encephalitis	.....	.....
Homicide	.....	.....
Influenza & LaGrippe	62	4.2
Intestinal Diseases	328	22.32
Kidney Diseases	173	11.76
Malaria	144	9.84
Measles	77	4.84
Meningitis, Cerebro Spinal	3	.20
Parturition & Pregnancy	49	3.36
Pellagra	22	1.5
Pneumonia	359	24.48
Pneumonia, Broncho	16	1.09
Poliomyelitis	.....	.....
Premature	.....	.....
Small Pox	.....	.....
Suicide	.....	.....
Tetanus	.....	.....
Tuberculosis, Pulmonalis	246	16.8
Tuberculosis, Other Forms	4	.27
Typhoid Fever	47	3.24
Whooping Cough	141	9.60

DEATHS FROM THE FOLLOWING DISEASES FOR TEN MONTHS ENDING OCTOBER 31, 1923 AND 1924.

RATES FOR THE YEAR BASED ON REPORTS FOR TEN MONTHS.

Attended by Doctors	1923 Number	1923 Rate	1924 Number	1924 Rate
Tuberculosis, Pulmonalis	1 115	76.6	1 078	73.5
Tuberculosis, other forms	100	6.9	98	5.3
Pellagra	242	16.6	253	17.3
Diphtheria	85	5.8	60	4.1
Scarlet Fever	2	.13	3	.2
Measles	45	3.1	107	7.3
Typhoid Fever	223	15.3	330	22.6
Small Pox	2	.13	6	.4
Cancer and Malignant Tumors	461	31.6	517	35.3
Malaria	85	5.8	105	7.2
Meningitis, Cerebro Spinal	26	1.8	44	3.0
Whooping Cough	78	5.3	136	9.3
Pneumonia	942	64.7	1 012	69.0
Pneumonia, Broncho	597	41.0	769	52.3
Pneumonia, Hypostatic	19	1.3	11	.74
Pleurisy	11	.76	17	1.15
Circulation, Diseases of	2 801	192.3	3,148	215.0
Kidney, Diseases of	1 043	71.6	1 297	88.5
Syphilis	45	3.1	43	2.88
Syphilis, Congenital	41	2.8	46	3.12
Tetanus	13	.9	26	1.76
Tetanus, Neonatorum	23	1.6	15	1.02
Dysentery	133	9.1	186	12.7
Dysentery, Amebic	10	.69	5	.33
Scurvy				
Intestinal Diseases	973	66.8	1 084	73.8
Erysipelas	13	.9	4	.27
Homicide	150	10.3	153	10.4
Suicide	35	2.4	45	3.0
Auto Accidents	82	5.6	120	8.2
Railroad Accidents	41	2.8	47	3.2
General Accidents	226	15.5	221	15.3
Lightning	17	1.2	14	.96
Legal Electrocutions	5	.35	2	.12
Poliomyelitis	12	.83	6	.4
Influenza and LaGrippe	291	20.0	135	9.2
Encephalitis, Lethargic	32	2.2	18	1.2
Alcoholism	8	.55	14	.96
Diabetes	92	6.3	120	8.2

DEATHS IN SOUTH CAROLINA, ACCORDING TO RACE AND COLOR FOR TEN MONTHS ENDING OCTOBER 31, 1923 AND 1924.

	White Male 1923	White Male 1924	Black Male 1923	Black Male 1924
Under 1 year	757	846	1 209	1 348
1 to 5 years	368	407	486	610
5 to 10 years	85	115	121	122
10 to 20 years	135	168	304	365
20 to 30 years	183	187	499	577
30 to 40 years	205	207	426	439
40 to 50 years	271	272	487	462
50 to 60 years	321	385	419	524
60 to 70 years	506	587	455	451
70 to 80 years	482	586	387	448
Over 80 years	181	216	242	297
Unknown	11	12	16	23
Totals	3 505	3 988	5 051	5 666

	White Female 1923	White Female 1924	Black Female 1923	Black Female 1924
Under 1 year	564	699	993	1 134
1 to 5 years	288	368	431	506
5 to 10 years	71	75	120	141
10 to 20 years	151	138	386	430
20 to 30 years	192	232	723	754
30 to 40 years	267	253	590	639
40 to 50 years	251	235	509	580
50 to 60 years	257	264	347	479
60 to 70 years	385	416	399	401
70 to 80 years	455	511	286	346
Over 80 years	306	313	266	300
Unknown	6	15	22	19
Totals	3 193	3 519	5 072	5 729
Indians 3.				

DIVISION OF VENEREAL DISEASE CONTROL

The only State-wide work against Venereal Diseases in South Carolina during 1924 was the distribution of literature, and this was only sent out on special request as there is no appropriation made by the State for this work.

Numerous calls have been made by physicians for free arsphenamine for indigent patients, and this was furnished through the U. S. Public Health Service, but they discontinued sending this free medication July 1st, and since this time we have been unable to supply the physicians.

There are only three counties in the State in which there are free clinics for the treatment of venereal diseases:

Greenville, Orangeburg and Spartanburg each have a free clinic supported by both County and City, and the following analysis of their work shows what has been done during the first eleven months of the year:

Syphilis—male and female	2,094
Gonorrhoea—male and female	1,700
Chancroid—male and female	52
Total all cases	3,846
Wassermann tests	1,994
Microscopic examinations	5,092
Total number of visits	8,663
Total number treatments	28,467
Ampohles Neoarsphanamine	8,663

SOUTH CAROLINA SANATORIUM

State Park, S. C., December 1, 1924.

To the Chairman and Members of the Executive Committee, South Carolina State Board of Health.

Gentlemen: I have the honor to submit the tenth annual report of the South Carolina Sanatorium.

During the last twelve months 139 white patients have received treatment. Of these 91 were women and 48 were men. The census today is 77; of these 50 are women and 27 are men. 40 women and 17 men have been discharged. 9 deaths,—8 men and 1 woman, have occurred in the white department. The physical

condition of those discharged was; 1 minimal; 46 moderately advanced; 8 far advanced; 1 non-tuberculous.

In the negro department, 55 patients have received treatment. Of these 27 were men and 28 were women. There are resident today, 10 men and 12 women. 16 deaths were equally divided between the sexes. 17 were discharged; 7 as moderately advanced, 9 as far advanced, and 1 unclassified.

The following tuberculous complications have been observed in the two departments:—Laryngeal tuberculosis in 15; pulmonary hemorrhage in 38; tuberculosis of spine in 1; hip disease in 1; adenitis in 4; otitis med 4; spontaneous pneumo thorax in 1. The following non-tuberculous conditions occurred:—syphilis in 13; bronchial asthma in 2; pellegra in 3; hookworm in 4.

The total number of hospital days is 35,160. The per capita cost, $1.62.

The farm and dairy have furnished the institution with fresh vegetables, melons, farm products, pork, milk, etc., to the value of $9,200.30.

Dr. Bonner and I have co-operated with the State and local tuberculosis associations in holding 24 clinics in 14 different counties. The counties visited were Kershaw, 4 days; Lexington, 4 days; Dorchester, 2 days; Beaufort, 2 days; Calhoun, 1 day; Williamsburg, 2 days; Clarendon, 2 days; Marlboro, 2 days; Darlington, 2 days; Dillon, 3 days; Horry, 2 days; Chesterfield, 2 days; Barnwell, 2 days; Orangeburg, 2 days. At these clinics 1815 people were examined; 212 of whom were suspects or positively tuberculous. During December other clinics will be held at Orangeburg 2 days; Chester 2 days; Bamberg 2 days. In addition to this work beyond the Sanatorium all citizens of the State applying at the Sanatorium have been examined.

In accordance with legislative appropriations, a home for the superintendent, an infirmary for women, servants' houses and an 8-inch well have been provided and are now almost completed. Arcola heating systems were installed in two pavilions. Work has been started upon a water line connecting the Palmetto building with the elevated water tank. Necessary repairs have been made upon the foundation and walls of the infirmary, the guttering and roofs of all the buildings.

The constantly increasing length of the waiting list of applicants for admission is one of the most emphatic demands for

enlarging facilities for the care of the tuberculous. The State has acknowledged her duty by undertaking the work. She is not keeping pace with adjoining states in performing it. There is need for a pavilion for men, a building for children, a nurses' home, a refrigerating plant, and a silo.

Sunday School and religious services have been conducted according to a schedule arranged by students of the Lutheran Theological Seminary and the Billy Sunday Club of Columbia. Other Church organizations have held services and furnished entertainment from time to time.

I wish to express my appreciation of the co-operation given by your Committee and by the State Health Officer.

Respectfully submitted,
ERNEST COOPER, Superintendent.

REPORT OF FIELD SECRETARY, SOUTH CAROLINA SANATORIUM

Columbia, S. C., December 16, 1924.

To the Chairman and the Executive Committee, South Carolina State Board of Health.

Gentlemen: Herewith is submitted my report of work done during the year 1924, which may be classified as office work, field work and case work among the patients.

Office Work: Over a thousand letters have been written to prospective patients, acknowledging applications, conferring about admissions or replying to requests for information; letters have been sent county health workers, club women, social workers, Tuberculosis Committees, physicians and others asking their cooperation in locating tuberculous patients and in making provision for those who could not be cared for at the South Carolina Sanatorium. As a means of education for the general public and as a means of aiding prospective patients to care for themselves and protect others while awaiting admission, copies of a leaflet entitled "Becoming acquainted with the Enemy Tuberculosis" were obtained and included in every letter sent out. Reports sent in to this office from Government Hospitals of tuberculous men dismissed to this State were remailed to the health officer of the community to which the patient was reported to have gone.

Field Work: Talks on the Sanatorium, its work and its needs, were made before 18 organizations in 12 counties; as a result, some donations were made for individual work among the patients. The new building for women having been secured last year, attention was turned this year to the securing of a building for children. This matter was presented to the Federated Clubs, the League of Women Voters, the Legislative Council of Women's Organizations and to some of the men's clubs of the State. It has been made a part of the legislative program of the Federated Clubs, and as such has been discussed at every district meeting in the State; some donations have already been received for the furnishing of a ward for children, and a definite promise made that if a building can be secured, furnishings and playground equipment will be donated. Some investigation of individual cases has been made where necessary, and local help secured for the financing of patients at county or private sanatoria until admission could be given at State Park.

Case work among patients: Under this head are included visiting at the Sanatoria, securing of clothing, etc. for needy patients; the aiding of relatives to visit patients; and attention to many small details which contribute to the comfort or happiness of those who are under the care of the Sanatoria.

Respectfully submitted,
ISABELLE LINDSAY CAIN.

ANNUAL REPORT STATE SANITARY ENGINEER

E. L. Filby, C. E.

To Members Executive Committee, South Carolina State Board of Health.

Gentlemen: The main activity of a state board of health and the only activity of an engineer of department of sanitary engineering is to prevent disease. The prevention of disease does not show any startling effects if one considers the work of any individual or department of a board of health but if all the contributing factors are fully considered—the work of a sanitary engineer can be compared to an important cog in the whole machine. Health work can be roughly divided into two classes, the rural work and the city or community work. The engineer is concerned largely with the work of the city or community

along the lines of water purification and sewage disposal. He thus is a connecting link between the local boards of health which carry on the local health work and the State Board of Health that handles problems that arise outside of towns or assists the local board upon request. Thus your sanitary engineer has been in direct contact with problems in every county of South Carolina with the exception of Jasper County. Not only has he been in every county except Jasper but in many counties visit after visit has been made in the interests of safe drinking water, better sewage disposal, decent swimming pool sanitation, sanitary garbage disposal and the elimination of trade wastes from our streams. Other minor problems such as school sanitation have been satisfactorily handled. Educational work for the water works superintendent has been kept up and interest in better water purification plants aroused. The attitude of "Oh it will be safe—nothing will happen" has disappeared to a large extent. The water works man now wants to know—"What more can I do to be sure I am delivering a safe water to my consumers?" And the State Board of Health thru its sanitary engineer has endeavored to supply the answer and to obtain action on the recommendations made.

The majority of the time and effort of the sanitary engineer has been devoted to municipal water supplies of which there are 85 in South Carolina. Of these 30 use streams for their source of water—filtering it for purification. Of these thirty only 3 fail to sterilize the filter effluent and it is expected that this number will be reduced to one before the year is out. Then there is a large group of water supplies which can be called water supplies for cotton mill villages. As you well know there are some cotton mill villages in South Carolina that are larger than small towns—we might mention Pelzer, Ware Shoals and Great Falls—communities well above the 4,000 mark in population but not incorporated. A survey of the sanitary conditions of cotton mill villages has been practically completed but data regarding it is not included in this report. It is important to note however that 12 cotton mill villages take their drinking water from streams and filter it. Many of the mill villages are supplied from Knox Type wells. This consists of groups of 2 inch wells located in streams or bottoms. Water is of the surface water type and installations have been known to dry up dug wells in the vicinity. Owing to their location there are

times when these wells may be considered dangerous. However no typhoid or intestional disease has been traced to any of these installations. In fact there has been no typhoid epidemics directly traceable to water as the transmitting agency in this State during the past year. Our streams are rapidly becoming dangerously polluted however especially in the Piedmont sections and the continued practice of improper sewage disposal by dilution into small streams will in time put such a load upon the filter plants taking water from these streams that they will be unable to purify it satisfactorily. During the past year numerous improvements and projects in water supply have been started or completed. Newberry is just ready to put its 1,000,000 gallon a day filter plant into service. This plant will represent an investment of $135,000.00 and will provide an adequate soft water supply for that city. Lockwood Greene and Company have put their bleachery plant at Lyman into service and supply about 2,000 people with filtered and sterilized drinking water. Westminster is completing its new filtration plant. Goldville—a cotton village town—has placed a water supply in service. North has about completed its water system and Latta has a new water and sewerage system. Hartsville has abandoned its old water supply for a new plant supplied by flowing wells yielding about 850 gallons per minute. Cateechee and Piedmont—two cotton mill towns—have put new filter plants into service. Chlorine sterilization is also used. Andrews has put their filteration plant into service. Georgetown has added chlorination to its slow sand filter plant and Anderson is now chlorinating its filter effluent. Inman has put in a new water works system—taking water from deep wells. Clinton's new filter plant is in service.

There are many more improvements that could be listed—all of which have come about thru gradual development of the State and in which the activity of the State Sanitary Engineer has been a small but active influence. There are several large projects in the process of formation—namely the new water supply of Spartanburg—a $1,350,000.00 impounding, filtration, etc., project and the auxiliary (will be main supply) of Greenville—an impounding project and pipe line in the mountains to the north—a project calling for an approximate expenditure of $2,000,000.00. On both projects your engineer has been in

contact. Other new projects call for new water supply and sewerage system for McCormick; a new water supply for Elloree, new water and sewerage system for Honea Path; new filter plant and sewerage system for Belton; new water supply and sewerage system for Ninety Six; more extensive water supply for Due West. Some of these have not been acted upon as yet. Lexington and Leesville are contemplating water and sewerage systems. Florence is still considering Black Creek as their new source of water,supply, and several conferences have been held regarding it.

One interesting experience was encountered with artesian-flowing well supply. The reservoir of this supply became the home of numerous small red colored worms. These worms occasionally worked thru the pumps and into the supply appearing on the filter of the bottling plant. Upon request the supply was investigated, the organism identified as the larvae of Chironomous, the reservoir cleaned and treated with copper sulphate and chloride of lime. No further complaints regarding the worm have been made. Another interesting experience was in regards to a small filter plant. The superintendent some years ago considered the necessity of filtration and sterilization as a fad and recalled how he as a boy drank from surface streams, etc. Now after the filter plant and chlorine are in service he was quite alarmed because of residences being put up on his water shed and wanted our advice as to how best to protect his raw water supply. Institutional supplies have been investigated and at South Carolina Sanatorium a new well has been completed and plans are under way to connect the negro building with the present service lines abandoning their private supply.

The writer has established the plan of distributing free small quantities of orthotolidin solution so that the water works men may run the test for excess chlorine at their plant—thus affording them some information as to the necessary amount of chlorine to add to the water. Many of the plants—in fact the majority —are now running this test—thus affording a factor of safety to the water. Before this distribution was started—many of the plants did not run the test because of the difficulty of getting the chemicals. The cost is almost negligable when handled this way.

With regards to sewerage and sewage disposal perhaps the biggest piece of work along this line is now being started. Fol-

lowing complaints regarding improper sewage disposal by a group of cotton mills located to the west of Greenville, the writer was requested by Dr. Earle, County Health Officer to investigate the problem and attend a hearing of all parties concerned. At the meeting the city of Greenville, the county and the mill interests were represented and the matter gone over. Your engineer was asked what could be done as no one seemed able to offer any solution to the perplexing problem of treating this large volume of sewage mixed with dye plant wastes. Your engineer then suggested that for the urban territory and the city a Sanitary District be formed to handle the problem of sewerage and sewage disposal. This area would approximate about 25 square miles of territory and afford an opportunity to study the whole problem and intelligently go about solving it. The city limits would be wiped out and the entire matter of sewerage and sewage disposal handled by the commissioners of the district and their engineers. It is probable that the district will be formed as everyone to whom the subject has been mentioned favors it. The district idea would allow definite development planning for the territory outside the city limits and also afford sewerage facilities for several cotton mill villages that are now hemmed in. It is the only sanitary district contemplated in this State but there is a possibility that the same idea once started will spread to other communities that have large urban population which does not desire annexation to the city. The district will take sometime to create and put into service but the State Board of Health thru its sanitary engineer has started the project. If this is put thru it will afford protection against disease to approximately 60,000 people and remove many sources of stream pollution. A similar project would apply nicely to Greer, Gaffney, Anderson and several other cities.

New sewerage projects have been put thru at Latta, Inman, Goldville, Lyman, Denmark, Andrews and plans are being considered for Lexington, Leesville, McCormick, Belton, Ninety Six and Honea Path. In all cases your engineer has been called upon to go over the plans check up on the final disposal and sometimes act as the pacifist between town and property owners. Special problems regarding the use of small septic tanks have been solved and many sets of plans for building septic tanks and hints of construction sent out. Schools have been visited when called upon and suggestions made as to sewage disposal. A plan

for the sewage disposal plant at the tuberculosis sanatorium of Charleston County was given to Dr. Banov. Several trips were made to Goldville—a cotton mill sewerage problem so as to protect the new source of water supply for Newberry. As stated before the sanitary survey of cotton mills and villages has not been completed but enough evidence is at hand to definitely state that water carriage sewerage is the only solution to the problem of keeping a cotton mill village safe to live in. Other forms of sewage disposal are only makeshift and should not be depended upon. The day is soon at hand when all communities of a certain density of population must have water works and sewerage. It is hoped that in South Carolina—no legal process may be necessary to accomplish this but we may need the power of the law to force the small minority to safeguard themselves and their neighbors. Specific investigations have been made at Greenville (Mills Mill et al. sewage treatment plant) at Abbeville—use of dug well for sewage disposal, at Camp Manufacturing Co., near St. Stephens for proposed sewerage, Lake City for operation of their treatment plant, at Dillon for improper disposal by the city, at Denmark for proposed location of treatment plant and at Andrews regarding pollution of Black River. Many other trips regarding sewage problems have been made.

Unless the Piedmont Cities and cotton mill communities pay considerably more attention to sewerage and sewage disposal—especially sewage disposal or treatment—they will be faced with serious law suits regarding stream pollution and creating nuisances dangerous to the public health. Fortunately the coastal plain streams are of sufficient volume to adequately care for the purification of the sewage placed in them but in the Piedmont with the location of the cities on ridges or high land and the gradual dimunition of stream flow as the land is cleared up, serious conditions will arise and even now are present in several places. The only solution that the engineer of the State Board of Health can suggest is the extension of the district plan or in places where this cannot be provided—then an annual service charge for connection to the sewer system and appliance of this fund to city appropriations for the purification of the sewage to a stable or non-putrescible liquid and inert sludge. It can be done but no one city in this State is purifying its sewage before discharging into a stream. Attempts are being made to do this and in several cases apparently with fair success but the

entire problem is not being met on the basis it should. The purification of the wastes from a city should be as important as the purification of water supply. No one has the right to dangerously pollute a stream.

With regards to swimming pools, swimming holes and ponds several inspection trips have been made and advice as to operation given. Spartanburg now has a good swimming pool and with decent operation should not have any trouble from it. Rock Hill has a nice swimming pool. Union, Aiken and several of the mill communities such as Ware Shoals have nice pools. The majority of places used for swimming purposes are however simply holes—no attention is paid to the source of water filling the pond—no care taken to have proper sewage facilities at the pools, no shower baths provided or steps taken to exclude persons suffering from skin diseases. The State Board of Health has not the money nor the personnel available to properly handle the matter of public swimming places. It is trusted that the swimming fad will die as quickly as it arose. It is a health problem that is exceptionally difficult to handle. Your engineer has done what he could to provide decently safe water at the ponds and pools he has called upon to visit. Many of the pools are simply large bath tubs.

A new problem in South Carolina has demonstrated that we cannot lay all the typhoid fever in this State to water borne causes. Milk as the medium for transmitting typhoid has attracted considerable attention. An outbreak of typhoid in and about one city of this State strongly indicated the possibility of milk transmission. At one meeting of the Executive Committee of the State Board of Health this problem was brought to your attention and since then your engineer has been considering the problem but owing to lack of funds for this purpose—nothing has been done. It is urged that this matter of milk sanitation be urged upon the Legislature so that work may be done along the prevention of disease transmission by milk. The regulations proposed to the Board seem to be reasonable and applicable to this State. The larger cities could adopt and enforce them with small additional expense to the cities.

Many small problems have been encountered and solved. Work along other than sanitary engineering has been done by your engineer for your Board. *Sewat* the regular monthly news letter to

the water works men has been sent out regularly and is still doing excellent educational work. It is suggested that along these lines a monthly publication by the Board would be a great piece of educational work. With the organization of the State into various clubs, study groups, etc., a large population of intelligent actively interested people could be reached. At present many many people and organizations do not know what the State Board of Health does.

The writer came with the Board in January 1919 commencing engineering work about April 1919. In nearly six years, he has noticed that but little change has come in the funds available for this work. While he feels that considerable good work has been done and will continue to be done—still the needs and the demands apparent to him cannot be evenly skimmed over with the present funds and personnel. Unfortunately the men in the field with whom he has had to work are of the class who rarely attract attention far beyond their local problems. Service is their watchword and their time must be spent in giving service to their consumers. They cannot leave to attend meetings and by show of numbers, letters, etc., impress upon the Legislature—your Board and the like—the need of more attention to this class of public health work. But let a serious condition arise—one where the need of quick action, etc., is needed and the call will be for the engineer of the State Board of Health. With our rapidly growing Piedmont section—new problems of great magnitude are coming up—the only way to handle them is to be prepared. Be prepared by having an adequate sanitary engineering force available who have had a chance to study the problems *before* they arise and plan to cope with them. Your present engineer cannot do more than he has done with the facilities at his disposal. To facilitate travel—he has purchased a car and traveled in it—often at a loss to himself but the work must be done and he is not one to say—no. Your opportunity is now knocking to cope with the new problems that are rapidly coming up. Provision for an annual expenditure of at least $15,000 for sanitary engineering work for the next five year period will enable you to intelligently cope with the problems that are coming up. The old proverb about a stitch in time will save nine—will apply here.

In conclusion the writer acknowledges that whatever has been accomplished has been done by the co-operation of the water

works men of South Carolina; the public officials of many towns and cities; the officials of many industrial organizations and the other public health workers in the State. Appreciation is expressed for their co-operation and effort in keeping our water supplies safe for human consumption and for keeping the toll of improper waste disposal at a low figure.

Respectfully submitted,
ELLSWORTH L. FILBY, C. E.,
State Sanitary Engineer.

ANNUAL REPORT OF J. H. WOODWARD, HOTEL INSPECTOR FOR 1924

Columbia, S. C., December 31, 1924.

Honorable Robt. Wilson Chairman, and Members of the Executive Committee of the State Board of Health, Columbia, S. C.

Gentlemen: The year just ended has been the best we have had since the Hotel Inspection Law has been in effect. As in the previous years, we have gone about over the State continuously making inspections regularly from day to day, and investigating all complaints as soon as they were made to this office. We have enjoyed a splendid co-operation on the part of the traveling public in keeping behind the hotel situation. Without the co-operation of the traveling public, in making complaints of the bad conditions, when they exist, it would be difficult indeed for one man to keep in touch with the situation covering the entire State, for one man cannot be in any one place very often during the year; but with the traveling men keeping us posted we are enabled to jump from place to place where it is most needed and in this way make the work much more effective. We have had two new modern hotels opened up during the year at Charleston, and one remodeled and added to at Dillon. We have seen the beginning of new hotels at Greenville, Anderson and Union. These are all now under construction and nearing completion. We have had one fire, the Ottarray at Greenville. The building was pretty badly damaged by fire and water but there was no injury to persons, or the loss of life. The building is now being completely remodeled and rebuilt and will be ready for occupancy by April first, 1925. The old hotel at Marion has been torn down and a new modern building is now being

erected in its place and it will be ready for business early in the year 1925. We are proud to state that the situation taken as a whole is in excellent shape and South Carolina ranks as high in good hotel accomodations as any other state.

We attach hereto a list of the hotels in the State together with the location of same and the average score of each hotel for the year 1924.

Respectfully submitted,

J. H. WOODWARD,
Hotel Inspector.

Scores of the Hotels in South Carolina during 1924.

Name of Hotel	Town	Score
Eureka	Abbeville	880
Plaza	Anderson	950
Salla	Anderson	800
Anderson	Andrews	750
Keith Oneida	Andrews	900
Aiken Inn	Aiken	860
Aiken	Aiken	880
Gildare	Allendale	700
Cleveland	Allendale	800
Diamond	Barnwell	900
Shamrock	Blackville	950
Visitor's Home	Beaufort	968
River View	Beaufort	915
The Tucker Inn	Beaufort	968
Bethune	Bethune	740
Evason	Bennettsville	860
Big Springs	Big Springs (R. D. Bethune)	950
Mayflower Inn	Bamberg	925
Commercial	Batesburg	875
Batesburg	Batesburg	980
Belton	Belton	780
Gettys	Blacksburg	840
Pioneer	Bishopville	900
New Commercial	Bishopville	900
Grace	Conway	900
Kinston	Conway	890
Clinton	Clinton	900
New Clio	Clio	750
Meyers	Chester	850
Carolina Inn	Chester	898
Chester	Chester	825
Covington	Cheraw	875
Reynard	Cheraw	875
Jefferson	Columbia	993
Jerome	Columbia	980
Imperial	Columbia	890
Gresham	Columbia	980
St. John	Columbia	850
Colonia	Columbia	950
Marmac	Columbia	980
McLean	Columbia	800
Union	Columbia	500
DeSoto	Columbia	980
Capitol	Columbia	840
Mason	Columbia	740
New Charleston	Charleston	890
St. John	Charleston	930
Argyle	Charleston	940
Timrod Inn	Charleston	940
America	Charleston	875
Francis Marion	Charleston	993
Fort Sumter	Charleston	990
Camden	Camden	900
Commercial	Camden	875

Name of Hotel	Town	Score
Park View Inn	Camden	900
Railroad	Central	600
Worsham Inn	Central	950
McFall	Darlington	993
Darlington	Darlington	840
Denmark	Denmark	920
Due West	Due West	750
Wheeler	Dillon	840
Dillon	Dillon	800
New Dixie Highway	Edgefield	850
Mountain View	Easley	840
Estill	Estill	780
Fountain Inn	Fountain Inn	700
Chisolm	Fairfax	800
New Hotel	Fairfax	900
Florence	Florence	850
Central	Florence	750
PeeDee	Florence	800
Dickman House	Florence	900
Imperial	Greenville	980
Ottaray	Greenville	950
Nokassa	Greenville	650
Wilson	Greenville	600
Alexandria	Greenville	800
Peidmont	Greenville	675
Cason	Greenville	575
New Commercial	Greenville	650
Washington	Greenville	850
Virginia	Greenville	980
Carolina	Greenville	800
Oregon	Greenwood	980
Greenwood	Greenwood	800
Moreland	Greenwood	950
Gladstone	Georgetown	840
Tourist	Georgetown	840
Winyah	Georgetown	800
Dearborn Inn	Great Falls	930
Carroll	Gaffney	960
Commercial	Gaffney	890
Mixon House	Hampton	750
Holly Hill	Hampton	800
Arcade	Hartsville	975
Hatchet	Inman	800
Johnston Inn	Johnston	925
Enterprise	Jonesville	600
Benton	Kershaw	800
Kingstree	Kingstree	940
Royal	Lancaster	955
Palmetto	Lake View	925
Biltmore	Lake City	800
Drafts	Lexington	875
Lamar	Lamar	800
Latta	Latta	700
Laurens	Laurens	806
Baggott	Lanes	850
Lockhart	Lockhart	800
Imperial	Landrum	840
Waterree	Longtown	875
Young's	Marion (Now being rebuilt)	800
Hampton	McBee	700
Kirkland	McCall	750
Manning	Manning	965
Kineen	Mayesville	840
Vaughn	Mullins	960
Katurah	McCormack	840
National	Newberry	875
Newberry	Newberry	950
Neeses	Neeses	780
Sherard	Ninety Six	800
Nichols	Nichols	700
Kirkland	Norway	800
Orangeburg	Orangeburg	875
St. Joseph	Orangeburg	870
Pickens Inn	Pickens	850
Old Hickory Inn	Pickens	750
Wise	Prosperity	700
Antrim	Pelzer	825
Peidmont	Peidmont	825

Name of Hotel	Town	Score
Victor Inn	Pacolet	975
Blackwell	Pageland	800
Balkeney	Pageland	800
Carolina	Rock Hill	880
Anderson Motor	Rock Hill	800
Sycamore	Ridgeland	890
Lipman	Ridgeland	750
Sawyers	Ridge Springs	800
James	Ridge Springs	800
Cleveland	Spartanburg	993
Gresham	Spartanburg	990
Franklyn	Spartanburg	993
Spartan	Spartanburg	800
Clinchfield	Spartanburg	880
Peidmont	Spartanburg	700
Jackson	Spartanburg	600
Washington	Spartanburg	800
Imperial	Sumter	900
Claremont	Sumter	900
Squirrel Inn	Summerville	975
Oconee Inn	Seneca	887
Palmetto	Seneca	806
Commercial	Springfield	875
Springfield	Springfield	750
Calhoun	St. Matthews	860
Hartzog	St. George	825
Saluda	Saluda	800
Timmonsville	Timmonsville	600
Union	Union	650
Edisto	Wagner	600
Alexander	Walhalla	920
Whitmire	Whitmire	780
Williston	Williston	950
Albert	Walterboro	800
Palmetto Inn	Walterboro	800
Ware Shoals	Ware Shoals	980
Winnsboro	Winnsboro	800
Shandon	York	840
Winter Resort Hotels.		
Wilcox's	Aiken	990
Highland Park	Aiken	990
Palmetto Inn	Aiken	900
Court Inn	Camden	990
Hobkirk Inn	Camden	980
Kirkwood	Camden	990
Villa Margherita	Charleston	990
Fort Sumter	Charleston	990
Big Springs	Big Springs (R. F. D. Bethune)	950
Jordan Inn	Monetta (R. F. D. Monetta)	960
Pine Forest Inn	Summerville	990
Carolina	Summerville	990
Summer Resort Hotels		
Ceasar's Head	Ceasar's Head	900
Big Springs	Big Springs	950
Glenn Springs	Glenn Springs	750
Valley View	R. F. D. Marrietta	850
Myrtle Beach	Myrtle Beach	850
Yacht Club	Myrtle Beach	900
Atlantic Beach	Sullivan's Island	900
Fort Sumter	Charleston	990

REPORT OF CHEMIST AND BACTERIOLOGIST

Charleston, S. C., December 26, 1924.

To the Chairman and Members of the Executive Committee of the State Board of Health.

Gentlemen: I have the honor to submit the following tabulated report of sanitary, chemical and bacterial analysis of sam-

ples of water from the public water supplies of South Carolina, made under the direction of the State Board of Health, in accordance with law relating to the purity of water supplies, I Code, Section 1599; and of information as to officials of local boards of health and plants, source, capacity, discharge of sewage and disposition of garbage.

It will appear from this report that the management and treatment of the public water supplies during the past year have been efficient. The efficiency in reflected in the fact that there have been no outbreaks of disease, which have been charged to contaminated or polluted public water supplies.

In several cases in which disease may have been due to local or private supplies, the use of these supplies has been discontinued.

In addition to analysis of water from towns and cities, chemical and bacterial analysis have been made of the waters, from fifty-one (51), industrial plants, two (2) bottling plants and seventy-three (73) miscellaneous supplies. Complete mineral analysis have been made of two (2) contemplated sources of public water supply, and a report made as to suitability. One (1), mineral analysis was made for the determination of therapeutic value of water and a report on same.

From fifty-six (56), supplies the samples first received showed either presumptive chemical or bacterial indications of contamination. In each of these cases check samples were called for, and directions were given regarding the inspection and regulation of the supplies, and analysis continued until supplies were regulated and the water found to be free from contamination, or unsuitable.

The contamination continued to persist in nineteen (19) supplies, and it was recommended that the use of these supplies be discontinued.

Seven samples were received for analysis for suspected poisons, one (1) buttermilk, four (4) waters, one (1) stomach, and one (1) vinegar. All of these were found to contain no poison, with the exception of the vinegar which was found to be poisoned, on account of having been stored in a zinc container. It was recommended that the use of this vinegar be discontinued, and that it be emptied into sewer.

Very respectfully,
FRANCIS L. PARKER, M. D.

Water Supply of Abbeville, S. C.

Abbeville Water & Electric Plant. Owned by city. Superintendent C. P. Townsend. In charge of collection of samples C. P. Townsend. Chairman of Local Board of Health Dr. J. R. Power.

Source:—Creek, one and a third miles from city. Capacity 500,000 gallons per day; filtered by mechanical filter. Treatment one half grain alum per gallon. Capacity of plant 500,000 gallons per day. Average consumption 250,000 gallons per day. Consumption per capita 40 gallons per day. Service metered. Sixty-five per cent of residences using city supply. Sewerage system: Sixty per cent of city seweraged and have water closets. Sewerage empties into creek. No garbage disposal plant. Garbage dumped in old fields and gullies.

Sample Drawn	Color	Chlorine	Free Ammonia	Albuminoid Ammonia	Nitrogen as Nitrites	Nitrogen as Nitrates	Total Solids	Bacterial indications of contamination	Chemical indications of contamination
March 8, 1924	5.00	7.00	0.02	0.01	0.001	0.10	80.00	Negative	Negative
June 4, 1924	5.00	9.00	0.01	0.01	0.00	0.00	80.00	Negative	Negative
September 10, 1924	5.00	7.00	0.01	0.01	0.00	0.10	102.00	Negative	Negative
December 16, 1924	5.00	6.00	0.04	0.04	0.00	0.10	111.00	Negative	Negative

Water Supply of Aiken, S. C.

City Water Works, Superintendent H. Sudlow. In charge of collection of samples H. Busch. Chairman of Local Board of Health, Dr. C. H. Farmer.

Source: Collection of Springs, 6½ miles from city. Capacity 2,000,000 gallons per day. Not filtered. Capacity of Plant, pumpage 1,500,000 gallons per day. Average consumption 350,000 gallons per day. Consumption per capita 80 gallons per day. One hounderd per cent of city using city water supply.

Sewerage system: Seventy-five per cent of city sewered. Fifty per cent of buildings connected with sewer and have water closets. Sand filter beds. Sewerage empties into small streams. No garbage disposal plant.

March 18, 1924	5.00	5.00	0.02	0.02	0.00	0.10	47.00	Negative	Negative
June 6, 1924	5.00	6.00	0.01	0.01	0.005	0.05	96.00	Negative	Negative
October 2, 1924	5.00	5.00	0.05	0.01	0.002	0.01	35.00	Negative	Negative

Water Supply of Allendale, S. C.

Allendale Light & Water Plant. Owned by town. Superintendent, J. W. Mallard. Chairman of Local Board of Health Dr. J. E. Warnock.

Source: Deep well 752 feet deep, 8 inches in diameter, near the center of town; not filtered. Capacity 240,000 gallons per day. Average consumption 60,000 gallons per day. Consumption per capita 34 gallons per day. Sixty per cent of service metered. Eighty-eight per cent of residences using city water supply. Fifty-eight per cent of buildings connected with sewer and have water closets. Septic tank and sprinkling filter. Sewerage empties into Cosawhatchie River. No garbage disposal plant. Garbage dumped in open fields one and a half miles from city and burned.

Sample Drawn	Color	Chlorine	Free Ammonia	Albuminoid Ammonia	Nitrogen as Nitrites	Nitrogen as Nitrates	Total Solids	Bacterial indications of contamination	Chemical indications of contamination
March 18, 1924	5.00	6.00	0.02	0.01	0.00	0.10	160.00	Negative	Negative
June 6, 1924	0.00	5.00	0.01	0.01	0.00	0.00	180.00	Negative	Negative
August 28, 1924	5.00	7.00	0.01	0.01	0.00	0.00	144.00	Negative	Negative
December 18, 1924	5.00	7.00	0.04	0.02	0.00	0.00	130.00	Negative	Negative

Water Supply of Anderson, S. C.

Southern Public Utilities Co. Manager, H. A. Orr. In charge of collection of samples, R. L. Swittenberg. Chairman of Local Board of Health, Dr. J. C. Sanders.

Source: Bailey's Creek, two miles, and Rocky River three miles from ctiy. Capacity 20,000,000 gallons per day. Filtered by mechanical filter Treatment one half grain of alum per gallon. Capacity of plant 2,500,000 gallons per day. Consumption per capita 50 gallons per day. Service metered. Ninety-five per cent of buildings use city water supply.

Sewerage system: Ninety-three per cent of city sewered. No sewerage disposal plant. Sewerage empties into Rocky River and Generostee Creek.

March 8, 1924	5.00	5.00	0.02	0.02	0.00	0.10	75.00	Negative	Negative
June 2, 1924	10.00	5.00	0.01	0.01	0.00	0.10	100.00	Negative	Negative
August 30, 1924	5.00	5.00	0.01	0.01	0.00	0.10	55.00	Negative	Negative
December 2, 1924	5.00	4.00	0.06	0.02	0.00	0.10	64.00	Negative	Negative

Water Supply of Bamberg, S. C.

Light, Water and Power Plant. Owned by city. Under Board of Public Works. Superintendent, L. P. Tobin. In charge of collection of samples, L. P. Tobin. Chairman of Local Board of Health, Dr. H. J. Stuckey.

Source: Eight inch flowing well, 480 feet deep. At present the 8 inch well gives more water than can be used, therefore other wells are not being used. Capacity of plant 250,000 gallons per day (24 hours.) Average consumption 75,000 gallons. Service ninety-five per cent metered. Sewerage system: Seventy-five per cent houses have septic tanks. No sewerage. Gargage disposed of by dump wagons.

April 21, 1924	10.00	6.00	0.01	0.01	0.00	0.00	69.00	Negative	Negative
August 21, 1924	30.00	6.00	0.01	0.01	0.00	0.00	75.00	Negative	Negative

Water Supply of Barnwell, S. C

Barnwell Light & Water Works, Owned by city. Superintendent, F. H. Miller. In charge of collection of samples, F. H. Miller. Chairman of local Board of Health, W. C. Milhouse.

Source: Four wells. Three 4½ inches and one 6 inches in diameter, 151 feet deep, in city. Capacity, 200,000 gallons per day. Not filtered. Capacity of plant, 110,000 gallons per day. Average consumption, 100,000 gallons per day. Consumption per capita, 30 gallons per day. Entire service metered. Fifty per cent of buildings using city water supply.

Sewerage system: Ninety per cent of buildings have water closets. Forty per cent connected with sewer. Ten per cent have septic tanks.

March 7, 1924	5.00	7.00	0.02	0.02	0.00	0.10	80.00	Negative	Negative
May 30, 1924	5.00	7.00	0.02	0.02	0.00	0.00	83.00	Negative	Negative
September 5, 1924	5.00	5.00	0.03	0.02	0.00	0.00	115.00	Negative	Negative
December 5, 1924	5.00	6.00	0.01	0.02	0.00	0.00	148.00	Negative	Negative

Water Supply of Batesburg, S. C.

Commission of Public Works. Owned by town. Superintendent, R. E. Hoover. In charge of collection of samples, R. E. Hoover. Chairman of local Board of Health, S. T. Altman.

Source: Three wells in city. Not filtered. Capacity 75,000 gallons per day. Service metered. Average consumption, 50,000 gallons per day. Consumption per capita, 20 gallons per day. Thirty-three and a third per cent of buildings using city water supply. Sewerage system: Complete sewerage system. One per cent septic tanks. Two garbage disposal plants.

March 19, 1924	5.00	6.00	0.02	0.01	0.00	0.20	125.00	Negative	Negative
September 18, 1924	5.00	6.00	0.08	0.03	0.001	0.00	155.00	Negative	Negative

Water Supply of Beaufort, S. C.

City of Beaufort, S. C. Light & Water Department. Superintendent, J. L. Logan. In charge of collection of samples, Hunter K. McGee. Chairman of Local Board of Health, Dr. Van Smith.

Source: Well twelve inches in diameter and 125 feet deep, in center of city. Not filtered. Average consumption, 50,000 gallons per day. Consumption per capita, 50 gallons per day. Service partly metered. Thirty per cent of buildings connected with city water supply. No sewerage system. Fifty per cent private sewers. Sewerage empties into Salt Water River. No garbage disposal plant. Garbage dumped at edge of city limits and burned.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination
March 23, 1924	10.00	35.00	0.02	0.02	0.00	0.00	264.00	Negative	Negative
August 12, 1924	5.00	31.00	0.01	0.01	0.00	0.10	226.00	Negative	Negative
September 16, 1924	5.00	38.00	0.15	0.04	0.00	0.00	257.00	Negative	Negative

Water Supply of Bennettsville, S. C.

Bennettsville Electric & Water Plant. Owned by city. Manager, E. C. Morrison. In charge of collection of samples, E. C. Morrison. Chairman of local Board of Health, Dr. D. Jennings.

Source: Eight wells, four and one-half inches in diameter, six 60 feet deep and two 40 feet deep . Pumped by steam or electric pumps. Average consumption, 275,000 gallons per day. Capacity of plant, 500,000 gallons per day. Consumption per capita, 70 gallons per day. All services except public services metered. Ninety-five per cent buildings in business and residence section and sixty per cent buildings in corporate limits using city water supply. Sewerage System: Eighty-seven per cent of buildings in residence and business section and 55 per cent buildings in city limits connected with sewer and have water closets. Septic tank. Sewerage empties into Crooked Creek one and a half miles from city. No garbage disposal plant.

March 5, 1924	10.00	23.00	0.01	0.01	0.00	0.30	110.00	Negative	Negative
June 10, 1924	5.00	25.00	0.02	0.01	0.00	0.20	135.00	Negative	Negative
September 5, 1924	5.00	26.00	0.01	0.02	0.001	0.20	148.00	Negative	Negative
December 6, 1924	5.00	23.00	0.06	0.04	0.000	0.20	107.00	Negative	Negative

Water Supply of Bishopville, S. C.

City of Bishopville Water Supply, owned by City of Bishopville. Superintendent in charge of supply, J. C. King. In charge of collection of samples, J. W. King. Chairman ol local Board of Health, D. A. Quattlebaum.
Source: Deep well. Capacity of supply 300,000 gallons per day. No treatment. Capacity of plant 300,000 gallons per day. Average consumption approximately 120,000 gallons per day. Sixty-five per cent of service metered at present.
Sewerage system: Tile pipe to settling tank. Fifty per cent of buildings have water closets and are connected with city sewer. Settled at tank and liquid allowed to flow to Lynche's river. Garbage is dumped out of city limits. No garbage disposal plant or incinerator.

March 6, 1924	5.00	6.00	0.01	0.01	0.00	0.10	30.00	Negative	Negative
June 6, 1924	0.00	7.00	0.01	0.01	0.00	0.00	45.00	Negative	Negative
September 16, 1924	5.00	5.00	0.01	0.01	0.00	0.00	14.00	Negative	Negative
December 6, 1924	5.00	6.00	0.01	0.01	0.00	0.00	50.00	Negative	Negative

Water Supply of Blacksburg, S. C.

City Water Works, owned by City. Superintendent, Gerald Lipscomb. In charge of collection of samples, Gerald Lipscomb. Chairman of local Board of Health, Dr. V. M. Roberts.
Source: Springs. Capacity of supply 275,000 gallons. Not filtered. No treatment. Capacity of plant 275,000 gallons per day. Average consumption 20,000 gallons per day. Service metered 100 per cent.
Sewerage system: Septic tanks, complete sewerage. Twenty per cent of buildings have water closets and are connected with city sewer. Sewage is disposed of by septic tanks, etc. Garbage disposed of by hauling away. No garbage plant or incinerator.

March 5, 1924	5.00	5.00	0.02	0.02	0.00	0.00	113.00	Negative	Negative
June 3, 1924	5.00	7.00	0.01	0.01	0.00	0.00	130.00	Negative	Negative
August 29, 1924	5.00	5.00	0.01	0.00	0.00	0.00	191.00	Negative	Negative
December 5, 1924	5.00	5.00	0.02	0.02	0.00	0.00	124.00	Negative	Negative

Water Supply of Camden, S. C.

City of Camden Water & Light Plant. Superintendent, W. B. Allred. In charge of collection of samples, John W. Wilson and W. B. Allred. Chairman of local Board of Health, C. W. Bilings.
Source: Spring fed creek, one mile from city limits. Capacity, 7,200,000 gallons per day. Filtered by gravity sand filters. Treatment, one and a fourth grains alum per gallon, 1.29 grains soda ash per gallon. Capacity of plant, 575,000 gallons per day. Eighty-one per cent of buildings connected with and using city water supply. Sewerage system: Fifty-four per cent of buildings connected with sewerage system and have water closets. Sewerage empties into Wateree River. No garbage disposal plant. Garbage emptied on outskirts of town and partly burned.

March 6, 1924	50.00	7.00	0.01	0.02	0.00	0.10	50.00	Negative	Negative
June 3, 1924	5.00	6.00	0.02	0.02	0.00	0.00	65.00	Negative	Negative
August 30, 1924	5.00	7.00	0.01	0.01	0.001	0.00	71.00	Negative	Negative
December 16, 1924	5.00	7.00	0.02	0.02	0.000	0.00	63.00	Negative	Negative

Water Supply of Charleston, S. C.

City Water Department, Commission of Public Works. Manager and Engineer, James E. Gibson. In charge of collection of samples, Dr. F. L. Parker. Chairman of local Board of Health, J. A. Ball.

Source: Goose Creek, drainage area 42.5 square miles, 12 miles from city. This is an impounded supply, the reservoir being an old tide water basin dammed off from tidal sea water. Area of flooded reservoir 2,100 acres. Capacity, 2,700,000,000 gallons which would supply 8,000,000 gallons per day. Filtered by mechanical filter. Treatment, Sulphate of Alumina, caustic soda and liquid chlorine. Capacity of plant, pumping 15,000,000 gallons, filetes 14,000,000 gallons. Average consumption, 5,500,000 gallons per day. Consumption per capita 60 gallons per day. Service 100 per cent metered. Supplementary supply, Ashley River, Bacon's Bridge, drainage area 231 square miles. Available supply as at present developed 2,000,000 gallons. Sewerage system: Sewerage empties into Charleston Harbor. Garbage disposal plant, incinerator.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 8, 1924	25.00	19.00	0.02	0.03	0.00	0.00	70.00	Negative	Negative
June 3, 1924	25.00	13.00	0.02	0.03	0.00	0.00	80.00	Negative	Negative
September 11, 1924	45.00	13.00	0.02	0.04	0.00	0.10	81.00	Negative	Negative
December 18, 1924	40.00	13.00	0.02	0.06	0.00	0.10	72.00	Negative	Negative

Water Supply of Cheraw, S. C.

Cheraw Water Works, Municipal. Superintendent, J. D. Smith. In charge of collection of samples, D. L. Tillman, Clerk. Chairman of local Board of Health, Robert Chapman, J. D. Smith, Health officer.

Source: Pee Dee River. Capacity 1,200 gallons per minute. Filtered by Rapid sand filters. Water treated with soda ash, alum, and chloride of lime. Capacity of plant 400,000 gallons per day. Average consumption 200,000 gallons per day. Service metered 100 per cent.

Sewerage system: Nature of sewerage system, gravity, untreated—Pee Dee River. Thirty per cent of buildings have water closets and are connected with city sewer. Sewerage is buried unless sewered. Sewerage system empties into Pee Dee River. Garbage is hauled to dump. No incinerator.

March 28, 1924	5.00	6.00	0.01	0.01	0.00	0.10	72.00	Negative	Negative
June 19, 1924	5.00	7.00	0.01	0.01	0.00	0.10	135.00	Negative	Negative
September 30, 1924	5.00	4.00	0.01	0.01	0.00	0.10	106.00	Negative	Negative
December 5, 1924	5.00	5.00	0.01	0.02	0.00	0.00	78.00	Negative	Negative

Water Supply of Chester, S. C.

Chester Water Works. Owned by city. Superintendent, J. H. McLure. In charge of collection of samples, J. H. McLure. Chairman of local Board of Health, J. M. Wise.

Source: River three miles from city. Capacity, 1,200,000 gallons per day. Filtered by mechanical filter. Treatment, 2 grains alum per gallon. Water chlorinated. Capacity of plant, 720,000 gallons per day. Average consumption, 500,000 gallons per day. Consumption per capita, 60 gallons per day. Service metered. Eighty-five per cent of buildings using city water supply. Sewerage system: Eighty-five per cent of city sewered and have water closets. No sewerage disposal plant. Sewerage empties into Tan Yard Branch. Incinerator for disposal of garbage.

March 4, 1924	15.00	10.00	0.01	0.02	0.00	0.10	84.00	Negative	Negative
June 4, 1924	5.00	10.00	0.00	0.01	0.00	0.05	48.00	Negative	Negative
September 3, 1924	20.00	7.00	0.01	0.01	0.00	0.10	132.00	Negative	Negative
December 3, 1924	5.00	9.00	0.02	0.02	0.00	0.00	86.00	Negative	Negative

Water Supply of Clinton, S. C.

Municipal Water and Light Plant. Superintendent, Olen T. Lawing. In charge of collection of samples, Olen T. Lawing. Chariman of local Board of Health, Dr. T. L. W. Bailey.

Source: Wells, one 10 inches, three 8 inches and four 6 inches in diameter and 500 feet deep, in city. Capacity, 180,000 gallons per day; not filtered. Average consumption, 160,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Eighty per cent of buildings connected with city water supply.

Sewerage system: Fifty per cent of buildings connected with sewer and have water closets. Septic tanks. Sewerage empties into two streams. No garbage disposal plant. Garbage dumped outside of city limits.

March 4, 1924	5.00	14.00	0.01	0.02	0.005	0.30	185.00	Negative	Negative
June 21, 1924	5.00	21.00	0.01	0.01	0.00	0.30	215.00	Negative	Negative
October 10, 1924	5.00	22.00	0.02	0.01	0.00	0.00	284.00	Negative	Negative
December 22, 1924	0.00	7.00	0.06	0.04	0.00	0.10	86.00	Negative	Negative

Water Supply of Columbia, S. C.

Water Department, City of Columbia. City Engineer, W. S. Tomlinson. In charge of collection of samples, C. H. White for water works and Dr. M. M. Rice. Local Health Officer, Dr. M. M. Rice.

Source: Congaree River. Capacity practically unlimited. Filtered by rapid sand filters. Capacity of plant, 13,000,000 gallons per day. Treatment, one grain of alum per gallon. Average consumption, 6,500,000 gallons per day. Service metered. Ninety-nine per cent of buildings using city water supply. Sewerage system. Eighty-five per cent of buildings connected with city sewer and have water closets. Sewerage empties into Congaree River Garbage is being dumped in out of the way places and covered with earth at present, and two disposal plants are now in operation.

March 5, 1924	20.00	6.00	0.01	0.02	0.00	0.10	70.00	Negative	Negative
May 31, 1924	10.00	7.00	0.01	0.01	0.00	0.00	87.00	Negative	Negative
August 30, 1924	5.00	5.00	0.01	0.01	0.00	0.10	84.00	Negative	Negative
December 2, 1924	5.00	4.00	0.02	0.03	0.00	0.00	44.00	Negative	Negative

Water Supply of Conway, S. C.

Water Supply of Town of Conway, owned by town. Superintendent, C. H. Snider. In charge of collection of samples, C. H. Snider. Health officer, C. H. Snider.

Source: Flowing artesian well. Capacity 90 gallons per minute. Not filtered. Treated with chloride of lime. Capacity of plant 150,000 gallons per day. Average consumption 125,000 gallons per day. Service 90 per cent metered.

Sewerage system: Nature of sewerage system verified sewer pipe. Fifty per cent of buildings have water closets and are connected with city sewer. Public sewer, emptying into Waccamaw river. No garbage disposal plant.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 5, 1924	15.00	52.00	0.01	0.02	0.00	0.10	775.00	Negative	Negative
June 12, 1924	5.00	55.00	0.01	0.01	0.01	0.00	656.00	Negative	Negative
September 2, 1924	20.00	53.00	0.01	0.01	0.00	0.05	699.00	Negative	Negative
December 2, 1924	15.00	48.00	0.11	0.03	0.001	0.00	710.00	Negative	Negative

Water Supply of Darlington, S. C.

Darlington Water Company. Superintendent, T. Miller White. In charge of collection of samples, T. Miller White. Chairman of local Board of Health, Dr. J. T. Coggeshall.

Source: Wells, diameter 8 inches. Depth, 335 feet. Diameter, 6 inches, depth 574 feet. Diameter, 6 inches, depth, 200 feet, and diameter 10 inches, depth, 317 feet, in city. Capacity, 650,000 gallons per day. Capacity of plant, 650,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 45 gallons per day. Service metered. One hundred per cent of buildings using city water supply. Sewerage system: Almost all of town is sewered. Seventy-five per cent of buildings connected with sewer and have water closets.

March 13, 1924	15.00	5.00	0.01	0.01	0.00	0.00	50.00	Negative	Negative
June 4, 1924	10.00	5.00	0.00	0.01	0.00	0.00	30.00	Negative	Negative
August 28, 1924	35.00	4.00	0.00	0.01	0.00	0.00	48.00	Negative	Negative
December 3, 1924	30.00	6.00	0.003	0.03	0.00	0.00	78.00	Negative	Negative

Water Supply of Dillon, S. C.

Dillon Water Works Plant. Owned by town. Secretary and Treasurer, Mrs. Jennie Watson Superintendent and in charge of collection of samples, J. W. Lovejoy, Chairman of local Board of Health, Dr. L. F. Johnson.

Source: Twenty shallow wells 30 feet deep (at present are boring wells below 200 feet). Capacity, 288,000 gallons per day. Filtered through sand. Treatment, soda ash and alum. Capacity of plant, 130,000 gallons per day. Average consumption, 75,000 gallons per day. Consumption per capita, 30 gallons per day. Service metered. Seventy-five per cent of buildings using city water supply. Sewerage system: Seventy-five per cent of city connected with sewerage system, fifty per cent of buildings have water closets. Septic tank. Sewerage empties into Pee Dee River. No garbage disposal plant. Garbage dumped in low and suitable places.

March 29, 1924	5.00	9.00	0.02	0.02	0.00	0.30	32.00	Negative	Negative
June 4, 1924	30.00	8.00	0.00	0.01	0.00	0.00	220.00	Negative	Negative
August 29, 1924	5.00	8.00	0.01	0.01	0.00	0.20	142.00	Negative	Negative
December 9, 1924	5.00	6.00	0.02	0.03	0.00	0.10	101.00	Negative	Negative

Water Supply of Easley, S. C.

City Water and Light Plant. Owned by City. Superintendent, T. M. Rogers. In charge of collection of samples, T. M. Rogers. Chairman of local Board of Health, Dr. W. B. Furman.

Source: Wells and creek. Wells, diameter, 2 inches; depth, average, 30 feet, pumped. Distance from city, three-quarters of a mile. Creek one mile from city. Capacity, 1,000,000 gallons per day. Creek water filtered by gravity filter. Treatment, lime and sulphate of alumina. Average consumption, 250,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered. Eighty per cent of buildings using city water supply. Sewerage system: Six miles of sewerage system. Septic tank. No garbage disposal plant. Garbage dumped into large ditch.

March 5, 1924	5.00	4.00	0.01	0.02	0.00	0.20	115.00	Negative	Negative
June 2, 1924	0.00	5.00	0.01	0.01	0.00	0.10	90.00	Negative	Negative
September 5, 1924	5.00	6.00	0.01	0.02	0.003	0.10	100.00	Negative	Negative
December 5, 1924	5.00	6.00	0.02	0.01	0.000	0.10	125.00	Negative	Negative

Water Supply of Edgefield, S. C.

Water Works Commission. Owned by Town of Edgefield, S. C. Superintendent, W. M. Harling. In charge of collection of samples, W. M. Harling. Chairman of local Board of Health, Dr. Robt. A. Marsh.

Source: Two wells, diameter 8 inches, depth 190 feet. Capacity 72,000 gallons per day. Not filtered. No treatment. Capacity of plant 60,000 gallons per day. Average consumption 45,000 gallons per day. Ninety-nine per cent of service metered.

Sewerage system: Twenty-five per cent of buildings have water closets and are connected with city sewer. Automatic flush tanks carry sewerage to septic tanks, thence through filter bed. No garbage disposal plant. Garbage is burned.

March 5, 1924	5.00	7.00	0.01	0.01	0.00	0.20	98.00	Negative	Negative
May 30, 1924	5.00	9.00	0.02	0.02	0.00	0.10	130.00	Negative	Negative
August 30, 1924	5.00	10.00	0.01	0.01	0.00	0.20	137.00	Negative	Negative
December 19, 1924	5.00	8.00	0.03	0.02	0.00	0.30	110.00	Negative	Negative

Water Supply of Florence, S. C.

City of Florence Water Department. Owned by city. Superintendent, D. L. Husbands. In charge of collection of samples, Dr. P. H. Brigham. Health officer, Dr. P. H. Brigham.

Source: Three wells, capacity 1,000,000 gallons per day. Not filtered. Average consumption, 750,000 gallons per day. Consumption per capita, 91 gallons per day. Service metered. Ninety per cent of buildings using city water supply. Sewerage System: Sixty per cent of city sewered. Forty per cent connected with sewer and have water closets. Sewerage disposal plant. Sewerage empties into Jeffries Creek. Nye odorless incinerator, ten ton capacity, located on outskirts of city.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination
March 4, 1924	15.00	26.00	0.01	0.01	0.00	0.10	140.00	Negative	Negative
June 4, 1924	20.00	25.00	0.00	0.01	0.00	0.00	164.00	Negative	Negative
August 28, 1924	25.00	25.00	0.00	0.02	0.00	0.05	118.00	Negative	Negative
December 3, 1924	10.00	35.00	0.02	0.02	0.00	0.00	238.00	Negative	Negative

Water Supply of Gaffney, S. C.

Board of Public Works. Owned by city. Superintendent, L. V. Gaffney. In charge of collection of samples, L. V. Gaffney. Chairman of local Board of Health, Dr. J. B. Hughey.

Source: Cherokee Creek, 3½ miles from city. Filtered by gravity filter. Treatment, one grain of alum per gallon. Capacity of plant, 1,000,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 25 gallons per day. Service metered. Seventy-five per cent of buildings using city water supply. Sewerage system: Forty per cent of buildings connected with sewer and have water closets. Sewerage disposal plant. Sewerage empties into branch. Garbage disposal plant, incinerator. Septic tank.

April 1, 1924	5.00	6.00	0.01	0.01	0.00	0.10	45.00	Negative	Negative
June 23, 1924	5.00	6.00	0.02	0.01	0.00	0.10	100.00	Negative	Negative
September 3, 1924	5.00	4.00	0.01	0.01	0.00	0.10	106.00	Negative	Negative

Water Supply of Georgetown, S. C.

Black River Water Co. G. A. Clarke, president. In charge of collections of samples, Dr. H. L. Wright. Chairman of local Board of Health, Dr. W. W. Gaillard.

Source: Black River, 75 miles from city by river, 15 miles by air line. Capacity, 1,000,000 gallons per day. Filtered by slow sand filter. Treated with Chlorine. Capacity of plant, 1,000,000 gallons per day. Average consumption, 177,000 gallons per day. Consumption per capita, 75 gallons per day. Service metered. Sewerage system: Sixty per cent of city sewered. Sewerage empties into Sampit River. No garbage disposal plant. Garbage disposed of by dumping in low places on abandoned rice fields.

March 6, 1924	120.00	10.00	0.02	0.03	0.00	0.10	70.00	Negative	Negative
May 31, 1924	130.00	9.00	0.02	0.03	0.00	0.00	83.00	Positive	Positive
September 3, 1924	200.00	8.00	0.01	0.02	0.00	0.00	72.00	Negative	Negative
December 3, 1924	170.00	10.00	0.01	0.10	0.00	0.00	106.00	Negative	Negative

Water Supply of Greenville, S. C.

Greenville City Water Works. Owned by city. Superintendent, E. M. Anderson. In charge of collection of samples, H. W. Perry. Chariman of local Board of Health, Dr. Davis Furman.

Source: Streams in Paris Mountain to reservoir, 8 and 12 miles from city. Not filtered. Gravity system. Capacity, 5,000,000 gallons per day. Average consumption, 2,000,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered. Ninety-eight per cent of buildings using city water supply. Additional source run only during dry season. Pump station on Enoree River. 3,000,000 gallons daily capacity. Filtered and chlorinated when used. Sewerage system: Seventy-five per cent of city sewered and have water closets. Sewerage empties into Reedy River. Garbage disposal plant. Garbage dumped at crematory and burned.

March 5, 1924	5.00	5.00	0.01	0.02	0.00	0.10	40.00	Negative	Negative
May 31, 1924	5.00	5.00	0.01	0.01	0.00	0.00	30.00	Negative	Negative
August 28, 1924	5.00	5.00	0.01	0.01	0.00	0.10	71.00	Negative	Negative
December 12, 1924	5.00	6.00	0.01	0.04	0.00	0.00	63.00	Negative	Negative

Water Supply of Greenwood, S. C.

Greenwood Water and Electric Plant. Owned by city. Superintendent, A. J. Sproles. In charge of collection of samples, A. J. Sproles. Chairman of local Board of Health, G. H. Blake.

Source: Nine deep wells. Capacity, 700,000 gallons; additional water supply, 750,000 gallons per day, filtered. Average consumption, 500,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered 90 per cent. Seventy-five per cent of buildings using city water supply. Sewerage system: Eighty per cent of city sewered. Treatment, septic tanks on to sand and gravel. No garbage disposal plant. Garbage dumped on vacant lots.

March 5, 1924	5.00	7.00	0.01	0.02	0.00	0.10	125.00	Negative	Negative
June 10, 1924	5.00	7.00	0.01	0.01	0.00	0.00	165.00	Negative	Negative
September 2, 1924	5.00	6.00	0.01	0.01	0.00	0.00	175.00	Negative	Negative
December 5, 1924	5.00	7.00	0.02	0.03	0.00	0.00	128.00	Negative	Negative

Water Supply of Greer, S. C.

Commission of Public Works. Owned by city. Superintendent, B. B. Mills. In charge of collection of samples, B. B. Mills. Chairman of local Board of Health, Dr. W. T. Brockman.

Source: Two springs about one mile from city. Capacity, 230,000 gallons per day. Not filtered. Average consumption, 125,000 gallons per day. Service metered. Sixty per cent of buildings using city water supply. Sewerage system: Fifty per cent of buildings connected with sewerage system and have water closets. Sewerage empties into septic tanks thence to branch. No garbage disposal plant. Garbage dumped into fields outside of city limits.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 5, 1924	5.00	4.00	0.01	0.01	0.00	0.20	55.00	Negative	Negative
June 3, 1924	10.00	5.00	0.01	0.01	0.00	0.00	65.00	Negative	Negative
September 10, 1924	5.00	4.00	0.03	0.02	0.00	0.20	10.00	Negative	Negative

Water Supply of Hartsville, S. C.

Board of Commission of Public Works. Owned by city. Superintendent, W. H. Garland. In charge of collection of samples W. H. Garland. Chairman of local Board of Health, D. R. Coker.

Source: Two wells, 12 inches in diameter and 180 feet deep, flowing 650 and 250 gallons per minute. Capacity, 1, 296,000 gallons per day. Average consumption 215,000 gallons per day. Consumption per capita, 65 gallons per day. About 530 meters. Sewerage system: Seventy per cent of city sewered. Sewerage empties into Black Creek. No garbage disposal plant. Ten per cent new water and sewerage being installed.

March 4, 1924	5.00	5.00	0.01	0.02	0.00	0.00	40.00	Negative	Negative
June 5, 1924	5.00	6.00	0.01	0.01	0.00	0.00	20.00	Negative	Negative
August 28, 1924	5.00	6.00	0.01	0.01	0.000	0.00	60.00	Negative	Negative
December 2, 1924	10.00	4.00	0.07	0.03	0.00	0.00	75.00	Negative	Negative

Water Supply of Honea Path, S. C.

Board of Public Works. Owned by City. Superintendent, W. P. Moring. In charge of collection of samples, W. P. Moring. Chairman of local Board of Health, Dr. H. B. Williams.

Source: Four wells. Capacity 75,000 gallons. Not filtered. Capacity of plant 50,000 gallons per day. Sixty-seven per cent of service metered.

Sewerage system: None. Garbage hauled to dump out of city.

March 4, 1924	5.00	38.00	0.01	0.01	0.005	0.40	170.00	Negative	Negative
June 4, 1924	5.00	43.00	0.00	0.01	0.000	0.20	177.00	Negative	Negative
August 29, 1924	5.00	57.00	0.01	0.01	0.001	0.30	191.00	Negative	Negative
December 9, 1924	5.00	46.00	0.07	0.05	0.000	0.30	139.00	Negative	Negative

Water Supply of Kingstree, S. C.

Kingstree Water Works. Owned by city. Superintendent, S. C. Anderson. Chairman of local Board of Health, A. M. Gordon.

Source: Three artesian wells on grounds with plant, at center of city. One well 3½ inches in diameter 350 feet deep, one 8 inches in diameter 518 feet deep and one 6 inches in diameter and 521 feet deep. Capacity 216,000 gallons per day. Not filtered. Average consumption 85,000 gallons per day. Service metered. Sixty-five per cent of buildings using city water supply.

Sewerage system: Have made extension of 13,000 feet of 4 inch main sewerage system. Eighty per cent of city sewered. Sixty-five per cent of buildings connected with sewer and have water closets. Sewerage disposal plant. Sewage treated with kerosene and salt. Sewerage empties into Black River. Eight inch main has been extended about 13,000 feet. No garbage disposal plant. Garbage dumped and burned outside of city.

March 13, 1924	5.00	6.00	0.02	0.02	0.001	0.10	240.00	Negative	Negative
June 14, 1924	5.00	9.00	0.02	0.01	0.001	0.10	255.00	Negative	Negative
September 16, 1924	5.00	8.00	0.09	0.02	0.001	0.00	292.00	Negative	Negative
December 16, 1924	5.00	7.00	0.04	0.03	0.000	0.00	274.00	Negative	Negative

Water Supply of Lancaster, S. C.

Commission of Public Works. Owned by city. Superintendent, R. S. Harper. In charge of collection of samples, R. N. Walkup. Chairman of local Board of Health, P. M. Lathan, G. J. Derrick.

Source: Two creeks, one and a half miles from city. Capacity, 1,000,000 gallons per day. Grain of alum per gallon used us treatment. Water filtered by mechanical filter. Capacity of plant, 720,000 gallons per day. Average consumption, 300,000 gallons per day. Consumption per capita, 20 gallons per day. Seventy-five per cent of buildings using city water supply. Service metered. Sewerage system: Seventy per cent of city sewered and have water closets. Sewerage empties into Little River. No garbage disposal plant. Garbage dumped outside city limits and treated with lime when necessary.

March 8, 1924	5.00	13.00	0.02	0.02	0.00	0.10	113.00	Negative	Negative
June 4, 1924	5.00	12.00	0.01	0.01	0.00	0.05	140.00	Negative	Negative
September 2, 1924	5.00	11.00	0.01	0.01	0.00	0.00	142.00	Negative	Negative
December 5, 1924	10.00	15.00	0.01	0.05	0.00	0.01	144.00	Negative	Negative

Water Supply of Laurens, S. C.

Municipal Light & Water Plant. Superintendent, F. W. Chapman. In charge of collection of samples, F. W. Chapman. Chairman of local Board of Health, Dr. W. D. Ferguson.

Source: Reedy Ford Creek. Rapid sand filters (2). Theatment 3-4 grain alum and one eighth grain lime. Covered clear well of 525,000 gallons. Present demand 225,000 gallons. Consumption per capita 45 gallons per day. Service metered. Ninety per cent of buildings using city water supply. Water chlorinated.

Sewerage system: Seventy-five per cent of buildings connected with sewer and have water closets. Sewerage empties into Little River. No garbage disposal plant. Garbage dumped inside of city limits and treated with lime when necessary.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination
March 13, 1924	5.00	5.00	0.01	0.02	0.00	0.10	115.00	Negative	Negative
June 14, 1924	5.00	7.00	0.02	0.02	0.00	0.10	130.00	Negative	Negative
August 28, 1924	5.00	6.00	0.01	0.01	0.00	0.10	112.00	Negative	Negative
December 18, 1924	5.00	6.00	0.03	0.02	0.00	0.10	207.00	Negative	Negative

Water Supply of Liberty, S. C.

Commission of Public Works. Owned by City of Liberty. Superintendent, P. O. Wilson. In charge of collection of samples, P. O. Wilson. Chairman of local Board of Health, Dr. W. M. Long.

Source: Branch. Capacity of supply 100,000 gallons per day. Filtered by Roberts filters, capacity of which are 25,000 gallons. Water treated with alum and chlorinated lime. Capacity of plant 50,000 gallons per day. Average consumption 30,000 gallons per day. Seventy-five per cent of service metered.

Sewerage system: Septic tanks. No city sewer. Garbage hauled away from town.

April 5, 1924	5.00	5.00	0.01	0.02	0.00	0.20	42.00	Negative	Negative
June 23, 1924	5.00	6.00	0.02	0.01	0.00	0.20	60.00	Negative	Negative
September 24, 1924	5.00	7.00	0.01	0.01	0.001	0.10	82.00	Negative	Negative
December 20, 1924	5.00	7.00	0.03	0.02	0.000	0.20	30.00	Negative	Negative

Water Supply of Manning, S. C.

Manning Water Works. Owned by city. Superintendent, F. P. Ervin. In charge of collection of samples, F. P. Ervin.
Source: Artesian well, 6 inches in diameter, 485 feet deep, cased. Not filtered. Capacity of well, natural flow, 37 gallons per minute. Capacity of well with Compressor working, 200 gallons per minute. Storage facilities: Concrete reservoir holding 245,000 gallons, Elevated tank holding 100,000 gallons. Average consumption daily, 75,000 gallons. Service metered. Eighty percent of buildings using city water supply. Sewerage system: Seventy-five percent of city sewered. Thirty-eight percent with water closets. Sewerage empties into Black River Swamp. No garbage disposal plant.

June 4, 1924	10.00	8.00	0.00	0.01	0.00	0.00	154.00	Negative	Negative

Water Supply of Marion, S. C.

Marion Water Company. Vice president and General Manager, P. A. Tillery, Raleigh, N. C. In charge of collection of samples T. D. Ector, Division Superintendent. Chairman of local Board of Health, Dr. C. S. Howell.
Source: Wells, diameter 8 and 6 inches; depths, 100 and 169 feet. In city. Capacity, 175,000 gallons per day; not filtered. Capacity of plant, 175,000 gallons per day. Average consumption 100,000 gallons per day. Consumption per capita, 25 gallons per day. Service metered. 100 per cent of buildings using city water supply. Sewerage system: Entire city sewered. Forty per cent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Catfish Creek. Garbage dumped on "Dump Grounds," outside of city and set on fire. No garbage disposal plant.

March 5, 1924	5.00	8.00	0.01	0.01	0.00	0.10	190.00	Negative	Negative
June 4, 1924	5.00	9.00	0.01	0.01	0.00	0.00	172.00	Negative	Negative
September 2, 1924	5.00	6.00	0.01	0.01	0.00	0.00	160.00	Negative	Negative
December 5, 1924	5.00	7.00	0.02	0.01	0.00	0.00	148.00	Negative	Negative

Water Supply of McColl, S. C.

Municipal Water Plant. McColl, S. C. Superintendent, Chief of Police W. F. Carpenter. In charge of collection of samples, W. F. Carpenter. Chairman of local Board of Health, J. C. Moore.
Source: Three wells 100 feet deep, 6 inches in diameter, within city. Capacity 300,000 gallons per day of 24 hours. Not filtered. Average consumption about 100,000 gallons per day. Service metered. Ninety per cent of buildings using city water supply.
Sewerage system: Entire city sewered. Eighty-five per cent of buildings have water closets. Sewerage disposal plant on Beaver Dam Creek. Sewer empties into Painter Creek. No garbage disposal plant. Garbage hauled outside of city limits.

March 6, 1924	10.00	7.00	0.01	0.01	0.00	0.30	75.00	Negative	Negative
May 31, 1924	10.00	10.00	0.01	0.01	0.00	0.20	115.00	Negative	Negative
August 29, 1924	5.00	8.00	0.02	0.01	0.002	0.20	55.00	Negative	Negative
December 12, 1924	5.00	7.00	0.03	0.03	0.00	0.30	38.00	Negative	Negative

Water Supply of Mullins, S. C.

Board of Public Works. Owned by town of Mullins. Superintendent, G. M. Brown. In charge of collection of samples G. M. Brown. Chairman of local Board of Health, Dr. J. H. Smith.

Source: Deep well, 10 inches in diameter and 350 feet deep in city. Capacity, 125,000 gallons per day. Average consumption, 75,000 gallons per day. Service metered. Ninety-nine per cent of buildings using city water supply.

Sewerage system: Fifty per cent septic tanks 4-10 of 1 per cent. Seventy-five per cent of city sewered. Forty per cent of buildings are connected with sewer and have water closets. Sewerage empties into open stream, White Oak. No garbage disposal plant. Garbage dumped outside of city limits.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 12, 1924	5.00	10.00	0.01	0.02	0.00	0.10	185.00	Negative	Negative
June 4, 1924	5.00	11.00	0.00	0.01	0.00	0.00	233.00	Negative	Negative
September 2, 1924	5.00	9.00	0.01	0.01	0.00	0.00	212.00	Negative	Negative
December 5, 1924	5.00	9.00	0.02	0.02	0.00	0.00	210.00	Negative	Negative

Water Supply of Newberry, S. C.

Commission of Public Works. Owned by city. Superintendent, H. W. Schumpert. In charge of collection of samples, Dr. R. L. Mayes. Chairman of local Board of Health, Dr. R. L. Mayes.

Source: Wells, 8 inches in diameter, 300 feet deep; 8 inches in diameter, 300 feet, on same vein, 10 inches in diameter, 300.5 feet deep. Pumped by air and also by Pomona No. 18, and No. 10 deep well pumps, in city limits. Capacity, 345,000 gallons per day; not filtered. Average consumption more than capacity. Consumption per capita 50 gallons per day. Service metered. Ninety-five per cent of buildings adjacent using city water supply. (Due to water shortage in Newberry an up-to-date water plant will be ready 1st, 1925. Filteration plant to Bush River which is 2.7 miles away, plant 1,000,000 gallons per day.)

Sewerage system: Seventy-five per cent adjacent connected with sewer. Now connections in tenement houses in cotton mill district. Were using a "Pot Dry Closet" system but are changing over right now. Sewerage disposal plant. Septic tank and filter. Sewerage empties into Scott's Creek. Incinerator for disposal of garbage.

(Note relative to Filteration plant):—Designed by P. N. Norross of Atlanta, Ga., and being constructed by Guion and Withers of Gastonia, N. C. The 12 "raw water line from Bush River is 2.7 miles long and discharges into a 1 million gallon reservoir. From thence gravity conducts into Adjustable mixing chamber and coagulation basin, thence to two filters of ½ million each, which are fitted with full automatic controllers. There are 2 500 G. P. M. Worthington Elect. Pumps at river and 2 Standpipe pumps from our two old clear water reservoirs 275,000 and 160,000 gallons, at plant, the 1,000 G. P. M. being fitted with engine. Minimum supply of stream 7 million gallons per day.

March 4, 1924	5.00	34.00	0.02	0.01	0.001	0.40	375.00	Negative	Negative
May 31, 1924	5.00	34.00	0.02	0.02	0.00	0.20	320.00	Negative	Negative
August 30, 1924	5.00	37.00	0.01	0.01	0.00	0.30	354.00	Negative	Negative
December 2, 1924	5.00	36.00	0.02	0.02	0.00	0.30	339.00	Negative	Negative

Water Supply of North Augusta, S. C.

North Augusta Water Works. Owned by town. W. E. Mealing, Chairman of Public Service Commission. In charge of collection of samples, W. E. Mealing. Chairman of local Board of Health, W. E. Mealing.

Source: Springs forming lake in city, not filtered. Chlorination plant has been installed. Treatment 1.50 pounds hypochlorite of lime to 1,500,000 gallons. Capacity of plant, 330,000 gallons per day. Capacity of supply, 400,000 gallons per day. Average consumption, 250,000 gallons per day. Service metered. Sewerage system: Eighty per cent of city sewered. Sewerage empties into Savannah River. No garbage disposal plant. Garbage dumped outside of town and burned.

March 4, 1924	5.00	8.00	0.02	0.01	0.001	0.40	75.00	Negative	Negative
May 30, 1924	5.00	8.00	0.02	0.02	0.002	0.20	88.00	Negative	Negative
August 28, 1924	5.00	7.00	0.01	0.01	0.002	0.20	39.00	Negative	Negative

Water Supply of Orangeburg, S. C.

Orangeburg Water and Light Plant. Owned by city. Superintendent, J. F. Pearson. Chairman of local Board of Health, V. W. Brabham.

Source: Three wells 8 inches in diameter and 200 feet deep, and one 10 inches in diameter and 250 feet deep, pumped and flowing in city. Capacity 800,000 gallons per day. Not filtered. Capacity of plant, 1,000,000 gallons per day. Average consumption, 400,000 gallons per day. Consumption per capita, 48 gallons per day. Service metered 90 per cent. Sewerage system: Sixty-five percent of buildings connected with sewer and have water closets. Sewerage empties into Edisto River. Garbage dumped at incinerator and burned.

March 5, 1924	10.00	8.00	0.02	0.01	0.00	0.00	190.00	Negative	Negative
June 10, 1924	5.00	10.00	0.03	0.02	0.00	0.00	235.00	Negative	Negative
September 3, 1924	5.00	9.00	0.03	0.02	0.00	0.00	234.00	Negative	Negative
December 9, 1924	5.00	6.00	0.02	0.02	0.00	0.00	173.00	Negative	Negative

Water Supply of Pickens, S. C.

Commission of Public Works. Owned by city. Superintendent, C. L. Hester. In charge of collection of samples, C. L. Hester. Chairman of local Board of Health, J. L. Valley.

Source: Town Creek, ten feet wide and eighteen inches deep. Fitlered. Filters 80,000 gallon capacity, sand and rock. Treatment lime and alum in settling basin, filtered and chlorinated. Capacity of plant 75,000 gallons per day. Average consumption 15,000 gallons per day. Service metered one hundred per cent.

Sewerage system: Gravity with flush tanks and septic tanks. Sixty per cent of buildings are connected with city sewer and have water closets. Sewerage disposed of by septic tanks and into large Town Creek. No garbage disposal plant. Garbage hauled into country.

Sample Drawn.	Color	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 10, 1924	5.00	4.00	0.01	0.02	0.00	0.10	33.00	Negative	Negative
June 30, 1924	80.00	5.00	0.02	0.01	0.00	0.10	70.00	Negative	Negative
September 22, 1924	5.00	5.00	0.01	0.01	0.00	0.10	66.00	Negative	Negative
December 19, 1924	5.00	5.00	0.03	0.03	0.00	0.10	78.00	Negative	Negative

Water Supply of Rock Hill, S. C.

Water and Light Department, owned by city of Rock Hill. Manager, W. P. Goodman. In charge of collection of samples, S. T. Frew. Chairman of local Board of Health, Dr. J. B. Miller.

Source: Catawba River, 6 miles from city. Filtered by mechanical filter. Treatment, ¾ grain of alum per gallon; ½ grain of lime per gallon; 0.05 grain hypochlorite of lime per gallon. Capacity of plant, 1,000,000 gallons per day. Average consumption, 800,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered. Seventy percent of buildings using city water supply. Sewerage system: Forty percent of buildings connected with sewer and have water closets. Sewerage empties into small streams after Imhoff treatment, thence into Catawba River. Sewerage disposal plant. Garbage dumped on city farm.

March 13, 1924	5.00	5.00	0.02	0.02	0.00	0.10	105.00	Negative	Negative
June 30, 1924	5.00	8.00	0.01	0.02	0.00	0.10	137.00	Negative	Negatice
September 16, 1924	5.00	5.00	0.02	0.01	0.00	0.10	100.00	Negative	Negative
December 3, 1924	5.00	6.00	0.04	0.03	0.00	0.00	126.00	Negative	Negative

Water Supply of St. Matthews, S. C.

Commission of Public Works, Owned by Town of St. Matthews, S. C. Superintendent, J. W. Tucker. In charge of collection of samples, J. W. Tucker. Chairman of local Board of Health, Dr. T. H. Dreher.

Source: Well. Capacity 360,000 gallons per day. Not filtered. No treatment. Capacity of plant 648,000 gallons per day. Average consumption 75,000 gallons per day. Service metered 100 per cent.

Sewerage system: Septic tanks, open closets cleaned and hauled off. Fifty per cent of buildings have septic tanks. No garbage disposal plant or incinerator. Garbage hauled off.

March 6, 1924	10.00	7.00	0.01	0.01	0.00	0.20	135.00	Negative	Negative
June 14, 1924	10.00	9.00	0.02	0.01	0.00	0.20	140.00	Negative	Negative
December 5, 1924	5.00	7.00	0.01	0.01	0.00	0.10	120.00	Negative	Negative

Water Supply of Seneca, S. C.

Commission of Public Works. Owned by Town of Seneca. Superintendent, J. M. King. In charge of collection of samples, J. M. King. Chairman of local Board of Health, Dr. W. C. Marrett.

Source: Thompson Creek. Capacity 1,440,000 gallons per day. Filtered. 1,008,000 gallons per day sand and rock filters. Treated with lime, alum and chlorine. Capacity of plant 720,000 gallons per 12 hours. Average consumption 75,000 gallons per day. Service metered 100 per cent.

Sewerage system: Gravity sewerage system. Seventy-five per cent of buildings have water closets and are connected with city sewer. Sewerage empties into creek. No garbage disposal plant or incinerator, garbage hauled away.

March 10, 1924	5.00	4.00	0.01	0.02	0.00	0.10	66.00	Negative	Negative
June 10, 1924	5.00	4.00	0.01	0.01	0.00	0.00	100.00	Negative	Negative
August 30, 1924	5.00	4.00	0.01	0.01	0.00	0.00	58.00	Negative	Negative
December 16, 1924	10.00	4.00	0.07	0.07	0.00	0.10	91.00	Negative	Negative

Water Supply of Spartanburg, S. C.

Spartanburg Water Works. Owned by city. Operated by specially chartered Board of Water Commissioners. Superintendent, R. B. Simms. Chairman of local Board of Health, Dr. H. R. Black.

Source: Chinquapin Creek that flows into reservoir, Shoaley and Lawson's Fork Creeks, two miles from city limits. Capacity, 8,000,000 gallons per day. City consumption, 2,500,000 gallons per day. Treatment, one-half to 4 grains alum owing to turbidity with six to eight hours coagulant run, thence through mechanical filter to clear well and treated with chlorine. Consumption per capita, 100 gallons per day. Service metered. Ninety per cent of city buildings using city water supply. Sewerage system: Ninety per cent of buildings connected with sewer and have water closets. Sewerage empties into Lawson's Fork Creek and Fair Forest Creek, 1-8 mile from city limits. Garbage disposal plant and garbage burned, some garbage dumped on outskirts of city.

March 5, 1924	5.00	4.00	0.02	0.02	0.00	0.20	45.00	Negative	Negative
June 3, 1924	10.00	6.00	0.01	0.02	0.00	0.10	35.00	Negative	Negative
September 3, 1924	5.00	5.00	0.01	0.01	0.00	0.10	72.00	Negative	Negative
December 9, 1924	5.00	6.00	0.04	0.04	0.00	0.10	139.00	Negative	Negative

Water Supply of Sumter, S. C.

City Water Works. Owned by city. Superintendent, F. K. Ellis. In charge of collection of samples, F. K. Ellis. Chairman of local Board of Health, H. L. Tisdale.

Source: Fourteen wells, 6 inches in diameter, 70 to 430 feet deep, pumped. Pumps in pit 9 feet below surface. One mile from center of city. Capacity, steam 1,800,000; electric, 1,440,000 gallons per day. Not filtered. Services 100 per cent metered. Seventy-five per cent of buildings connected with city water supply. Sewerage system: Seventy-five per cent of buildings connected with sewer and have water closets. Sewerage empties into Turkey Creek on eastern side of city, and into Green Creek on western side of city, after passing through septic tanks. No garbage disposal plant. Garbage hauled and dumped on lot outside of city limtis.

Sample Drawn	Color	Chlorine	Free Ammonia	Albuminoid Ammonia	Nitrogen as Nitrites	Nitrogen as Nitrates	Total Solids	Bacterial Indications of Contamination	Chemical Indications of Contamination
March 10, 1924	15.00	10.00	0.01	0.02	0.001	0.40	75.00	Negative	Negative
June 10, 1924	5.00	14.00	0.02	0.01	0.01	0.30	75.00	Negative	Negative
September 13, 1924	5.00	13.00	0.05	0.06	0.00	0.20	110.00	Negative	Negative
December 22, 1924	0.00	12.00	0.04	0.05	0.00	0.30	125.00	Negative	Negative

Water Supply of Timmonsville, S. C.

Board of Public Works, Superintendent E. J. Lynch. In charge of collection of samples, E. J. Lynch.

Source: Three wells, 8 inches in diameter and 170 feet deep, on outer edge of town. Capacity, 576,000 gallons per day. Average consumption, 65,000 gallons per day. Consumption per capita, 30 gallons per day. Service metered Eighty per cent of buildings using city water supply. Sewerage system: Sixty per cent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Sparrow Swamp. No garbage disposal plant. Garbage burned and dumped into swamp.

March 8, 1924	60.00	6.00	0.02	0.02	0.00	0.10	105.00	Negative	Negative
June 4, 1924	10.00	5.00	0.00	0.01	0.00	0.00	112.00	Negative	Negative
August 30, 1924	70.00	4.00	0.01	0.01	0.00	0.00	69.00	Negative	Negative
December 3, 1924	60.00	5.00	0.02	0.02	0.00	0.00	67.00	Negative	Negative

Water Supply of Union, S. C.

Municipal Electric Light & Water Works. Superintendent, W. B. Aiken. In charge of collection of samples, W. B. Aiken. Chairman of local Board of Health, J. T, Parham.

Source: Creek, 2 miles from city. Capacity, 15,000,000 gallons per day. Filtered by mechanical filter. Treatment, alum and chlorine. Capacity of plant, 2,000,000 gallons per day. Average consumption, 1,000,000 gallons per day. Consumption per capita, 93 gallons per day. Service metered. One hundred percent of buildings using city water supply. Sewerage system: Seventy-five per cent of city sewered and have water closets. Sewerage empties into Buffalo Creek. No garbage disposal plant. Garbage dumped outside of city limits.

March 5, 1924	5.00	6.00	0.02	0.01	0.001	0.10	70.00	Negative	Negative
June 2, 1924	10.00	5.00	0.01	0.01	0.001	0.05	130.00	Negative	Negative
August 30, 1924	5.00	7.00	0.01	0.01	0.000	0.00	139.00	Negative	Negative
December 5, 1924	6.00	6.00	0.09	0.02	0.00	0.01	82.00	Negative	Negative

Water Supply of Walhalla, S. C.

Board of Public Works, Owned by Town of Walhalla. Superintendent J. F. Bearden. In charge of collection of samples Geo. M. Ansel. Chairman of local Board of Health, Dr. J. W. Bell.

Source: Branch and Springs. Capacity 504,000 gallons per day. Filtered through sand and rock filter. No treatment. Capacity of plant 504,000 gallons per day. Average consumption 132,931 gallons per day. Service metered 100 per cent.

Sewerage system: Nature of sewerage system—Gravity, automatic flush tanks empty in Creek. Twenty per cent of buildings are connected with sewer and have water closets. Sewerage empties into Cain Creek and Bear Swamp Creek. No garbage disposal plant or incinerator. Garbage hauled off to two or three piles.

March 8, 1924	5.00	4.00	0.02	0.01	0.00	0.00	37.00	Negative	Negative
June 10, 1924	5.00	5.00	0.01	0.02	0.00	0.00	80.00	Negative	Negative
September 2, 1924	20.00	5.00	0.01	0.01	0.00	0.00	172.00	Negative	Negative
December 5, 1924	5.00	5.00	0.01	0.02	0.00	0.00	86.00	Negative	Negative

Water Supply of Williston, S. C.

Williston Water & Light Company. Superintendent, J. W. Odiome. In charge of collection of samples, J. W. Odiome. Chairman ol local Board of Health, J. L. Smith, M. D.

Source: Two wells. Capacity 60,000 gallons per day. No treatment. Capacity of plant 50,000 gallons per day. Average consumption 20,000 gallons per day. Service 100 per cent metered. No sewerage system:—Sewerage disposed of by a few tanks. No sewage disposal plant. No garbage disposal plant, garbage hauled off.

April 16, 1924	5.00	7.00	0.01	0.01	0.00	0.20	100.00	Negative	Negative
December 1, 1924	5.00	5.00	0.04	0.05	0.00	0.20	143.00	Negative	Negative

Water Supply of Winnsboro, S. C.

Board of Public Works. Owned by town. Superintendent, T. R. Ellison. In charge of collection of samples, T. R. Ellison. Chairman of Local Board of Health, Dr. J. E. Douglas.

Source: Creek, 2 miles from city. Filtered. Capacity, 1,000,000 gallons. Treatment, with alum. Average consumption, 75,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered. Eighty percent of buildings using city water supply. Sewerage system: Eighty-five percent of city sewered. Seventy-five percent of buildings connected with sewer. Sewerage empties into Cathcart's Branch, ¾ mile from city. Septic tank. No garbage disposal plant. Garbage dumped in low waste places.

Sample Drawn	Color	Chlorine	Free Ammonia	Albuminoid Ammonia	Nitrogen as Nitrates	Nitrogen as Nitrates	Total Solids	Bacterial Indications of Contamination	Chemical Indications of Contamination
March 13, 1924	40.00	9.00	0.02	0.02	0.00	0.20	95.00	Negative	Negative
June 3, 1924	10.00	8.00	0.01	0.01	0.00	0.10	77.00	Negative	Negative
September 5, 1924	5.00	8.00	0.01	0.02	0.00	0.10	110.00	Negative	Negative
December 12, 1924	5.00	9.00	0.08	0.10	0.00	0.20	86.00	Negative	Negative

Water Supply of Woodruff, S. C.

Board of Public Works. Owned by town. Superintendent, V. L. Woodruff. In charge of collection of samples, V. L. Woodruff. T. W. Cox, Chairman of Board. Chairman of local Board of Health, Dr. Woodruff.

Source: Two wells, one-half mile from city. Depth, 400 and 141 feet. Capacity, about 185,000 gallons per day. Service metered. Forty percent of buildings using city water supply, 180 connections. Sewerage system: Seventy-five per cent of city sewered. Forty per cent of buildings connected with sewer and have water closets, 150 sewerage connections. Two septic tanks. Sewerage empties into branch and creek. No garbage disposal plant. Garbage dumped in tank.

March 8, 1924	5.00	7.00	0.01	0.01	0.00	0.10	170.00	Negative	Negative
June 6, 1924	20.00	9.00	0.01	0.01	0.01	0.05	110.00	Negative	Negative
September 9, 1924	5.00	6.00	0.03	0.02	0.00	0.10	189.00	Negative	Negative
December 6, 1924	5.00	6.00	0.02	0.02	0.00	0.10	178.00	Negative	Negative

York Water Plant. Owned by City. Superintendent, J. O. Wray. In charge of collection of samples, J. O. Wray. Chairman of local Board of Health, Dr. Whiteside.

Source: Branch ¾ mile from city. Capacity, 800,000 gallons per day. Capacity of plant, 500,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Seventy percent of buildings connected with city water supply. Sewerage system: Fifty percent of buildings connected with sewer and have water closets. Sewerage empties into Fishing Creek on east and Turkey Creek on west. No garbage disposal plant. Garbage dumped on wornout land outside city limits.

March 8, 1924	15.00	9.00	0.01	0.01	0.01	0.10	94.00	Negative	Negative
June 10, 1924	10.00	6.00	0.01	0.01	0.00	0.00	93.00	Negative	Negative
August 30, 1924	5.00	9.00	0.01	0.01	0.00	0.10	57.00	Negative	Negative
December 16, 1924	5.00	7.00	0.05	0.04	0.00	0.10	162.00	Negative	Negative

FINANCIAL STATEMENT

The following is a correct statement of the expenditures of the State Board of Health for the fiscal year of 1924. All claims against the Board are itemized and rendered in duplicate, the original being attached to warrant of Comptroller General and forwarded to his office for payment—the duplicate being filed in this office.

SUPERVISION AND CONTROL OF HEALTH.

Appropriation		$2,000 00
A. Personal Service.		
A-3 Special Payments.		
Executive Committee at $10.00 per diem	$ 990 00	
B. Contractual Services.		
B-2 Travel	800 00	
C. Supplies.		
C-4 Office Supplies	50 00	
D. Fixed Charges and Contributions.		
D-9 Contributions (Association Dues)	44 00	1,884 00
Balance		$ 116 00

SUPERINTENDENCE AND ACCOUNTS.

Appropriation		$15,084 30
A. Personal Service.		
A-1 Salaries	$9,400 00	
A-2 Wages	400 00	
B. Contractual Services.		
B-2 Travel	2,000 00	
B-3 Telephone and Telegraph	432 73	
B-4 Repairs	19 60	
B-5 Printing and Advertising	130 75	
C. Supplies.		
C-4 Office Supplies	599 54	
D. Fixed Charges and Contributions.		
D-2 Rents	1,578 58	
D-4 Insurance	8 30	
D-9 Contributions (Assn. Dues)	65 00	
G. Equipment.		
G-1 Office Equipment	45 75	
Total		$14,680 25
Balance		$ 404 05

Outstanding Bill—Printing Sanitary Code.

CONTROL OF EPIDEMIC DISEASES.

Appropriation		$32,400 00
A. Personal Service.		
A-1 Salaries	$3,600 00	
A-3 Special Payment.		
Professional Services	145 00	
B. Contractual Services.		
B-2 Travel	1,600 00	
C. Supplies.		
C-6 Medical and Surgical Supplies	26,999 44	
Total		32,344 44
Balance		$ 55 56

HYGIENIC LABORATORY.

Appropriation		$11,750 00
A. Personal Service.		
Salaries	$8,900 00	
Wages	400 00	
B. Contractual Services.		
B-1 Freight, Express & Del.	27 01	
B-2 Travel	79 50	
B-3 Telephone and Telegraph	100 00	
B-4 Repairs	47 81	
B-6 Water, Heat, Light & Power	136 20	
C. Supplies.		
C-3 Feed and Veterinary Supplies	49 62	
C-4 Office Supplies	949 62	
C-5 Laundry & Disinfectants	9 55	
C-6 Medical & Surgical Supplies	349 81	
C-7 Refrigerating Supplies	150 00	
C-12 Other Supplies	346 70	
D. Fixed Charges and Contributions.		
D-9 Contributions (Assn. Dues)	45 00	
G. Equipment.		
G-1 Office Equipment	99 95	
G-6 Live Stock	20 00	
Total		$11,710 77
Balance		$ 39 23

BUREAU OF VITAL STATISTICS.

Appropriation		$7,575 00
A. Personal Service.		
A-1 Salaries	$6,120 00	
B. Contractual Services.		
B-2 Travel	60 00	
B-3 Telephone and Telegraph	79 20	
B-7 Other Contractual Services	176 00	
C. Supplies.		
C-1 Office Supplies	899 52	
G. Equipment.		
G-1 Office Equipment	200 00	
Total		$7,543 64
Balance		$ 31 36

BUREAU OF CHILD HYGIENE.

Maternity-Infancy Work (Sheppard-Towner Act)

Appropriation		$6,000 00
A. Personal Service.		
A-1 Salaries	$3,900 00	
B. Contractual Services.		
B-2 Travel	1,000 00	
B-5 Printing and Advertising	40 00	
C. Supplies.		
C-4 Office Supplies	360 00	
C-8 Educational Supplies	668 29	
Total		$5,968 29
Balance		$ 31 71

AID FOR CRIPPLED CHILDREN.

Appropriation		$5,000 00
Personal Service.		
A-3 Special Payments (Hospital Care)	$4,062 17	

B. Contractual Services.		
B-2 Travel	749 92	
Total		$4,812 09
Balance		$ 187 91

Outstanding Bills.

RURAL SANITATION AND COUNTY HEALTH WORK.

Appropriation		$19,107 94
A. Personal Service.		
A-1. Salaries	$15,070 00	
B. Contractual Services.		
B-2 Travel	3,010 00	
B-3 Telephone and Telegraph	67 50	
B-4 Repairs	404 11	
C. Supplies.		
C-4 Office Supplies	387 94	
D. Fixed Charges & Contributions.		
D-2 Rents	162 00	
Total		$19,101 55
Balance		$ 6 39

BUREAU OF CHILD HYGIENE.

Appropriation		$9,900 00
A. Personal Service.		
A-1 Salaries	$6,300 00	
A-2 Wages	24 00	
B. Contractual Services.		
B-2 Travel	1,999 65	
B-3 Telephone and Telegraph	178 01	
C. Supplies.		
C-4 Office Supplies	296 48	
C-8 Educational Supplies	145 58	
C-12 Other Supplies	50 00	
D. Fixed Charges & Contributions.		
D-2 Rents	814 32	
G. Equipment.		
G-1 Office Equipment	60 00	
Total		$9,868 04
Balance		$ 31 96

MALARIA CONTROL WORK.

Appropriation		$14,550 00
Personal Service.		
A-1 Salaries	$4,350 00	
A-2 Wages	4,000 00	
A-3 Special Payments	2,000 00	
B. Contractual Services.		
B-2 Travel	2,772 05	
B-3 Telephone and Telegraph	150 00	
B-5 Printing and Advertising	124 99	
C. Supplies.		
C-4 Office Supplies	300 00	
C-8 Educational Supplies	157 40	
C-12 Other Supplies	98 00	
D. Fixed Charges & Contributions.		
Rents	432 00	
G. Equipment.		
G-1 Office Equipment	123 03	
Total		$14,507 47
Balance		$ 42 53

HOTEL INSPECTION FUND.

Appropriation		$5,240 00
A. Personal Service.		
A-1 Salaries	$3,240 00	
B. Contractual Services.		
B-2 Travel	1,300 00	
B-5 Printing and Advertising	46 18	
D. Fixed Charges & Contributions.		
D-4 Insurance	36 00	
G. Equipment.		
G-4 Motor Vehicle and Equipment	600 00	
Total		$5,222 18
Balance		$ 17 82

SOUTH CAROLINA AND PALMETTO SANATORIA.

Appropriation		$53,100 00
A. Personal Service.		
A-1 Salaries	$15,770 00	
A-2 Wages	4,041 92	
A-3 Fees	550 00	
B. Contractual Services.		
B-1 Freight, Express & Deliveries	119 88	
B-2 Travel	708 27	
B-3 Telephone and Telegraph	303 88	
B-4 Repairs	991 42	
B-7 Other Contractual Services	1,304 87	
C. Supplies.		
C-1 Food Supplies	14,284 61	
C-2 Fuel Supplies	1,694 56	
C-3 Feed & Veterinary Supplies	3,682 54	
C-4 Office Supplies	108 53	
C-5 Laundry & Disinfecting Supplies	22 20	
C-6 Medical and Surgical Supplies	336 79	
C-7 Refrigerating Supplies	1,258 10	
C-9 Motor Vehicle Supplies	849 42	
C-10 Agricultural & Botanical Supplies	606 34	
C-11 Dry Goods & Clothing Supplies	32 20	
C-12 Other Supplies	2,509 15	
D. Fixed Charges and Contributions.		
D-4 Insurance	1,825 00	
F. Materials.		
F-1 Materials	150 00	
G. Equipment.		
G-4 Motor Vehicles and Equipment	805 00	
G-5 Motorless Vehicles & Equipment	146 57	
G-8 Other Equipment	850 00	
Total		$52,952 25
Balance		$ 147 75

Outstanding Bills.

IMPROVEMENTS AT S. C. SANATORIUM.

Appropriation		$45,500 00
H. Land and Structures.		
Woman's Infirmary and Equipment	$34,903 47	
Nurses' Home	5,564 87	
Servants' Houses	2,500 00	
Well and Plant	500 00	
Total Expended		$43,968 34
Balance on hand		$ 1,531 66
Outstanding bills		1,531 66
Total Appropriation S. C. State Board of Health		$227,207 24
Total Expenditures 1924		226,094 97
Balance		$ 1,112 27